# COs & POs

# 2020-21

# ODD SEMESTER

# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY
## SIRA ROAD, TUMKUR- 572 106.

2021-22 odd

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | BASIC ELECTRICAL ENGINEERING | SUBJECT CODE | 21ELE23 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Analysis of Resistive Circuits and Solution of resistive circuits with independent sources |
| CO2 | Two Terminal Element Relationships for inductors and capacitors and analysis of magnetic circuits. |
| CO3 | Discuss the laws of illumination, different types of lamps, lighting schemes and design of lighting systems. |
| CO4 | Analysis of Single Phase AC Circuits, the representation of alternating quantities and determining the power in these circuits. |
| CO5 | Analysis of Single Phase AC Circuits, the representation of alternating quantities and determining the power in these circuits. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

G. H R

Head of the Department
Electrical & Electronics Engineering
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PRINCIPAL
SIET., TUMAKURU.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | TANUJA KS | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2021-22 | | |
| COURSE | B.E | SEMESTER | I | SECTION | EEE |
| SUBJECT | BASIC ELECTRICAL ENGINEERING | | SUBJECT CODE | 21ELE23 | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| CO1 | 3 | 3 | | | | | | | | | | |
| CO2 | 3 | 2 | | | | | | | | | | |
| CO3 | 3 | 2 | | | | | | | | | | |
| CO4 | 3 | 2 | | | | | | | | | | |
| CO5 | 3 | 2 | | | | | | | | | | |
| AVERAGE | 3 | 2.2 | | | | | | | | | | |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.6 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 62.57 | 1.87 | 1.37 | | | | | | | | | | |
| CO2 | 38.35 | 1.15 | 0.84 | | | | | | | | | | |
| CO3 | 41.16 | 1.23 | 0.90 | | | | | | | | | | |
| CO4 | 46.84 | 1.40 | 1.03 | | | | | | | | | | |
| CO5 | 46.52 | 1.39 | 1.02 | | | | | | | | | | |
| AVERAGE | 47.08 | 1.40 | 1.03 | | | | | | | | | | |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.21 |

Head of the Department
Electrical & Electronics Engineering
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SIET., TUMAKURU.

| Academic year | 2021-22 | | | SEM | 1 | | Total strength | | | | | Subject | BASIC ELECTRICAL ENGINEERING | | | | Subject Code | 21ELE23 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:I/SEC : CS | IA TEST 1(30M) | | | IA TEST 2(30M) | | | IA TEST 3(30M) | | | ASSIGNMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV21CS001 | 6 | 7 | 13 | 6 | 6 | 12 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 18.8 | 11.8 | 12.8 | 13.8 | 65.51724 | 42.72727 | 40.68966 | 44.13793 | 47.58621 |
| 1SV21CS002 | 10 | 10 | 20 | 10 | 10 | 20 | 9 | 10 | 19 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 23 | 25.8 | 19 | 18 | 19 | 79.31034 | 58.63636 | 65.51724 | 62.06897 | 65.51724 |
| 1SV21CS003 | 8 | 9 | 17 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 21 | 19.8 | 9.4 | 9.4 | 9.4 | 72.41379 | 45 | 32.41379 | 32.41379 | 32.41379 |
| 1SV21CS004 | 1 | 2 | 3 | 3 | 2 | 5 | 6 | 7 | 13 | 2 | 2 | 2 | 2 | 2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 14 | 10.8 | 5.6 | 9.6 | 10.6 | 48.27586 | 24.54545 | 19.31034 | 33.10345 | 36.55172 |
| 1SV21CS005 | 5 | 4 | 9 | 6 | 6 | 12 | 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 18 | 15.8 | 12.6 | 8.6 | 8.6 | 62.06897 | 35.90909 | 43.44828 | 29.65517 | 29.65517 |
| 1SV21CS006 | 6 | 6 | 12 | 10 | 6 | 16 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 19 | 21.8 | 12.8 | 16.8 | 15.8 | 65.51724 | 49.54545 | 44.13793 | 57.93103 | 54.48276 |
| 1SV21CS008 | 4 | 4 | 8 | 3 | 4 | 7 | 8 | 8 | 16 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 17 | 12.8 | 10.6 | 14.6 | 14.6 | 58.62069 | 29.09091 | 36.55172 | 50.34483 | 50.34483 |
| 1SV21CS009 | 5 | 5 | 10 | 4 | 3 | 7 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 18 | 14.8 | 9.6 | 13.6 | 13.6 | 62.06897 | 33.63636 | 33.10345 | 46.89655 | 46.89655 |
| 1SV21CS010 | 7 | 7 | 14 | 4 | 3 | 7 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 20 | 16.8 | 9.8 | 16.8 | 15.8 | 68.96552 | 38.18182 | 33.7931 | 57.93103 | 54.48276 |
| 1SV21CS012 | 4 | 5 | 9 | 5 | 6 | 11 | 5 | 4 | 9 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 17 | 15.8 | 12.8 | 11.8 | 10.8 | 58.62069 | 35.90909 | 44.13793 | 40.68966 | 37.24138 |
| 1SV21CS013 | 8 | 8 | 16 | 7 | 8 | 15 | 8 | 8 | 16 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 21 | 20.8 | 14 | 14 | 14 | 72.41379 | 47.27273 | 48.27586 | 48.27586 | 48.27586 |
| 1SV21CS014 | 10 | 9 | 19 | 10 | 10 | 20 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 23 | 24.8 | 17.2 | 17.2 | 17.2 | 79.31034 | 56.36364 | 59.31034 | 59.31034 | 59.31034 |
| 1SV21CS015 | 7 | 7 | 14 | 10 | 9 | 19 | 9 | 9 | 18 | 2 | 2 | 2 | 2 | 2 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 20 | 22.8 | 17.8 | 17.8 | 17.8 | 68.96552 | 51.81818 | 61.37931 | 61.37931 | 61.37931 |
| 1SV21CS016 | 5 | 5 | 10 | 4 | 4 | 8 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 18 | 14.8 | 7.8 | 9.8 | 9.8 | 62.06897 | 33.63636 | 26.89655 | 33.7931 | 33.7931 |
| 1SV21CS017 | 7 | 8 | 15 | 10 | 9 | 19 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 20 | 23.8 | 18.6 | 16.6 | 17.6 | 68.96552 | 54.09091 | 64.13793 | 57.24138 | 60.68966 |
| 1SV21CS018 | 7 | 8 | 15 | 8 | 8 | 16 | 8 | 8 | 16 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 20 | 21.8 | 15.8 | 15.8 | 15.8 | 68.96552 | 49.54545 | 54.48276 | 54.48276 | 54.48276 |
| 1SV21CS020 | 1 | 1 | 2 | 1 | 2 | 3 | 3 | 3 | 6 | 2 | 2 | 2 | 2 | 2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 14 | 7.8 | 5.6 | 5.6 | 5.6 | 48.27586 | 17.72727 | 19.31034 | 19.31034 | 19.31034 |
| 1SV21CS021 | 8 | 9 | 17 | 10 | 9 | 19 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 23 | 24.8 | 17 | 18 | 18 | 72.41379 | 56.36364 | 58.62069 | 62.06897 | 62.06897 |
| 1SV21CS022 | 4 | 4 | 8 | 6 | 6 | 12 | 8 | 9 | 17 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 17 | 15.8 | 12.8 | 14.8 | 15.8 | 58.62069 | 35.90909 | 44.13793 | 51.03448 | 54.48276 |
| 1SV21CS023 | 1 | 2 | 3 | 4 | 4 | 8 | 3 | 8 | 11 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 14 | 11.8 | 10 | 11 | 12 | 48.27586 | 26.81818 | 34.48276 | 37.93103 | 41.37931 |
| 1SV21CS024 | 5 | 5 | 10 | 6 | 7 | 13 | 5 | 2 | 7 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 18 | 16.8 | 14.2 | 12.2 | 9.2 | 62.06897 | 38.18182 | 48.96552 | 42.06897 | 31.72414 |
| 1SV21CS025 | 10 | 9 | 19 | 10 | 10 | 20 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 23 | 24.8 | 18.4 | 18.4 | 18.4 | 79.31034 | 56.36364 | 63.44828 | 63.44828 | 63.44828 |
| 1SV21CS026 | 5 | 4 | 9 | 4 | 4 | 8 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 18 | 13.8 | 6.2 | 9.2 | 9.2 | 62.06897 | 31.36364 | 21.37931 | 31.72414 | 31.72414 |
| 1SV21CS027 | 5 | 5 | 10 | 4 | 4 | 8 | 8 | 8 | 16 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 18 | 14.8 | 10.6 | 14.6 | 14.6 | 62.06897 | 33.63636 | 36.55172 | 50.34483 | 50.34483 |
| 1SV21CS028 | 6 | 7 | 13 | 9 | 9 | 18 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 19 | 21.8 | 17 | 15 | 15 | 65.51724 | 49.54545 | 58.62069 | 51.72414 | 51.72414 |
| 1SV21CS029 | 7 | 7 | 14 | 8 | 8 | 16 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 20 | 20.8 | 17.8 | 19.8 | 18.8 | 68.96552 | 47.27273 | 61.37931 | 68.27586 | 64.82759 |
| 1SV21CS030 | 4 | 4 | 8 | 0 | 1 | 1 | 8 | 8 | 16 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 17 | 9.8 | 5 | 12 | 12 | 58.62069 | 22.27273 | 17.24138 | 41.37931 | 41.37931 |
| 1SV21CS031 | 4 | 4 | 8 | 2 | 2 | 4 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 17 | 11.8 | 9.2 | 13.2 | 13.2 | 58.62069 | 26.81818 | 31.72414 | 45.51724 | 45.51724 |
| 1SV21CS032 | 3 | 3 | 6 | 3 | 3 | 6 | 4 | 4 | 8 | 2 | 2 | 2 | 2 | 2 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 16 | 11.8 | 7.4 | 8.4 | 8.4 | 55.17241 | 26.81818 | 25.51724 | 28.96552 | 28.96552 |
| 1SV21CS033 | 3 | 2 | 5 | 3 | 2 | 5 | 5 | 2 | 7 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 14 | 10.8 | 7.6 | 10.6 | 7.6 | 48.27586 | 24.54545 | 26.2069 | 36.55172 | 26.2069 |
| 1SV21CS034 | 7 | 8 | 15 | 6 | 7 | 13 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 20 | 19.8 | 12.6 | 15.6 | 14.6 | 68.96552 | 45 | 43.44828 | 53.7931 | 50.34483 |
| 1SV21CS035 | 6 | 7 | 13 | 7 | 8 | 15 | 8 | 8 | 16 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 19 | 19.8 | 14.2 | 14.2 | 14.2 | 65.51724 | 45 | 48.96552 | 48.96552 | 48.96552 |
| 1SV21CS036 | 4 | 4 | 8 | 5 | 2 | 7 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 17 | 14.8 | 9.6 | 12.6 | 12.6 | 58.62069 | 33.63636 | 33.10345 | 43.44828 | 43.44828 |
| 1SV21CS037 | 7 | 8 | 15 | 10 | 9 | 19 | 8 | 9 | 17 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 20 | 23.8 | 16 | 15 | 16 | 68.96552 | 54.09091 | 55.17241 | 51.72414 | 55.17241 |
| 1SV21CS038 | 1 | 2 | 3 | 3 | 2 | 5 | 3 | 3 | 6 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 14 | 8.8 | 6.2 | 7.2 | 7.2 | 48.27586 | 20 | 22.37931 | 24.82759 | 24.82759 |
| 1SV21CS039 | 0 | 9 | 19 | 8 | 9 | 17 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 13 | 22.8 | 18.4 | 19.4 | 19.4 | 44.82759 | 51.81818 | 63.44828 | 66.89655 | 66.89655 |
| 1SV21CS040 | 5 | 4 | 9 | 7 | 6 | 13 | 7 | 6 | 13 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 18 | 16.8 | 12.6 | 11.6 | 12.6 | 62.06897 | 38.18182 | 43.44828 | 36.89655 | 43.44828 |
| 1SV21CS041 | 7 | 6 | 13 | 7 | 7 | 14 | 8 | 9 | 17 | 2 | 2 | 2 | 2 | 2 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 20 | 18.8 | 15.8 | 16.8 | 17.8 | 68.96552 | 42.72727 | 54.48276 | 57.93103 | 61.37931 |
| 1SV21CS042 | 3 | 3 | 6 | 3 | 3 | 6 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 16 | 11.8 | 9.4 | 11.4 | 11.4 | 55.17241 | 26.81818 | 32.41379 | 39.31034 | 39.31034 |
| 1SV21CS043 | 5 | 5 | 10 | 5 | 5 | 10 | 6 | 5 | 11 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 18 | 15.8 | 9.2 | 10.2 | 9.2 | 62.06897 | 35.90909 | 31.72414 | 35.17241 | 31.72414 |
| 1SV21CS044 | 8 | 8 | 16 | 10 | 9 | 19 | 9 | 9 | 18 | 2 | 2 | 2 | 2 | 2 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 21 | 23.8 | 16.4 | 16.4 | 16.4 | 72.41379 | 54.09091 | 56.55172 | 56.55172 | 56.55172 |
| 1SV21CS045 | 5 | 4 | 9 | 0 | 0 | 0 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 18 | 9.8 | 3 | 10 | 10 | 62.06897 | 22.27273 | 10.34483 | 34.48276 | 34.48276 |
| 1SV21CS047 | 8 | 8 | 16 | 8 | 8 | 16 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 21 | 21.8 | 13.6 | 15.6 | 15.6 | 72.41379 | 49.54545 | 46.89655 | 53.7931 | 53.7931 |
| 1SV21CS048 | 3 | 3 | 6 | 5 | 5 | 10 | 5 | 4 | 9 | 2 | 2 | 2 | 2 | 2 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 16 | 13.8 | 13.6 | 13.6 | 12.6 | 55.17241 | 31.36364 | 46.89655 | 46.89655 | 43.44828 |
| 1SV21CS049 | 5 | 6 | 11 | 5 | 6 | 11 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 18 | 16.8 | 12.2 | 16.2 | 16.2 | 62.06897 | 38.18182 | 42.06897 | 55.86207 | 55.86207 |
| 1SV21CS050 | 4 | 4 | 8 | 6 | 6 | 12 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 17 | 15.8 | 13.4 | 13.4 | 13.4 | 58.62069 | 35.90909 | 46.2069 | 46.2069 | 46.2069 |
| 1SV21CS052 | 7 | 7 | 14 | 7 | 6 | 13 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 20 | 19.8 | 10.2 | 13.2 | 12.2 | 68.96552 | 45 | 35.17241 | 38.62069 | 42.06897 |
| 1SV21CS053 | 3 | 3 | 6 | 3 | 3 | 6 | 7 | 6 | 13 | 2 | 2 | 2 | 3 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 16 | 13.8 | 9.2 | 13.2 | 12.2 | 55.17241 | 26.81818 | 31.72414 | 45.51724 | 42.06897 |
| 1SV21CS054 | 2 | 2 | 4 | 2 | 2 | 4 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 15 | 9.8 | 9.2 | 13.2 | 13.2 | 51.72414 | 22.27273 | 31.72414 | 45.51724 | 45.51724 |
| 1SV21CS055 | 4 | 5 | 9 | 5 | 5 | 10 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 17 | 15.8 | 12.2 | 14.2 | 14.2 | 58.62069 | 35.90909 | 42.06897 | 48.96552 | 48.96552 |
| 1SV21CS056 | 7 | 7 | 14 | 7 | 6 | 13 | 8 | 9 | 17 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 20 | 19.8 | 11.6 | 13.6 | 14.6 | 68.96552 | 45 | 40 | 46.89655 | 50.34483 |
| 1SV21CS057 | 7 | 7 | 14 | 8 | 9 | 17 | 8 | 9 | 17 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 20 | 20.8 | 14.6 | 13.6 | 14.6 | 68.96552 | 47.27273 | 50.34483 | 46.89655 | 50.34483 |
| 1SV21CS058 | 5 | 5 | 10 | 2 | 2 | 4 | 8 | 8 | 16 | 2 | 2 | 2 | 2 | 2 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 18 | 12.8 | 10.6 | 10.6 | 10.6 | 62.06897 | 29.09091 | 36.55172 | 57.24138 | 57.24138 |
| 1SV21CS059 | 1 | 1 | 2 | 0 | 1 | 1 | 5 | 4 | 9 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 14 | 6.8 | 6.8 | 10.8 | 9.8 | 48.27586 | 15.45455 | 23.44828 | 17.24138 | 33.7931 |
| | | | | | | | | | | | | | | | | | | | | 18.14815 | 16.87407 | 11.93704 | 13.58519 | 13.49259 | 62.57982 | 38.35017 | 41.1622 | 46.84547 | 46.52618 |

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PRINCIPAL
SIET, TUMAKURU

21-22 Odd

# DEPARTMENT OF EEE

| SUBJECT | Basic Electrical Engineering | SUBJECT CODE | 21ELE13/23 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Understand the dc circuits and electrical laws. |
| **CO2** | Apply the basic electrical laws to solve ac and dc circuits |
| **CO3** | Discuss the construction and operation of various electrical machines |
| **CO4** | Identify suitable electrical machines for practical implementations |
| **CO5** | Explain the concept of electrical transmission and distribution ,electricity billing, circuit protective devices and personal safety measures. |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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SIET., TUMAKUR

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | UMABAI | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | 2021-2022 | | | | | | |
| COURSE | B.E | SEMESTER | I | SECTION | | C & D | | | | | | |
| SUBJECT | Basic Electrical Engineering | | | SUBJECT CODE | | 21ELE13/23 | | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 1 | - | - | 1 | 1 | 1 | - | - | - | 1 |
| CO2 | 3 | 3 | 2 | 1 | - | 1 | 0 | 0 | - | - | - | 1 |
| CO3 | 3 | 2 | 1 | 1 | - | 1 | 1 | 1 | - | - | - | 1 |
| CO4 | 3 | 2 | 2 | 1 | - | 1 | 1 | 1 | - | - | - | 1 |
| CO5 | 3 | 1 | 2 | - | - | 2 | 1 | 1 | - | - | 1 | 1 |
| AVERAGE | 3 | 2 | 1.6 | 1 | - | 1.2 | 0.8 | 0.8 | - | - | 1 | 1 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 1.37 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 62.89 | 2.00 | 1.33 | 0.66 | | | 0.66 | 0.66 | 0.66 | | | | 0.66 |
| CO2 | 65.97 | 2.19 | 2.19 | 1.46 | 0.73 | | 0.73 | | | | | | 0.73 |
| CO3 | 53.52 | 1.87 | 1.25 | 0.62 | 0.62 | | 0.62 | 0.62 | 0.62 | | | | 0.62 |
| CO4 | 62.01 | 1.77 | 1.18 | 1.18 | 0.59 | | 0.59 | 0.59 | 0.59 | | | | 0.59 |
| CO5 | 55.34 | 1.89 | 0.63 | 1.26 | | | 1.26 | 0.63 | 0.63 | | | 0.63 | 0.63 |
| AVERAGE | 64.96 | 1.944 | 1.44 | 1.03 | 0.64 | | 0.77 | 0.625 | 0.625 | | | 0.63 | 0.646 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 0.927 |

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PRINCIPAL
SIET., TUMAKURU.

| Academic year | 2021-22 | | | SEM | I | | Total strength | | | | | Subject | Basic electrical engg | | | Subject Code | 21ELE13 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:I | IA TEST 1(30M) | | | IA TEST 2(30M) | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(20 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1=3 | CO2=4 | CO3=3 | CO4=3 | CO5=3 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV21CS001 | 14 | 11 | 25 | 14 | 12 | 26 | 14 | 13 | 27 | 4 | 4 | 4 | 4 | 4 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 25.2 | 36.2 | 23.2 | 25.2 | 24.2 | 0.74 | 0.82 | 0.68 | 0.74 | 0.71 |
| 1SV21CS002 | 16 | 14 | 30 | 16 | 14 | 30 | 16 | 14 | 30 | 4 | 4 | 4 | 4 | 4 | 9.8 | 9.8 | 9.8 | 9.8 | 9.8 | 49 | 29.8 | 43.8 | 27.8 | 29.8 | 27.8 | 0.88 | 1.00 | 0.82 | 0.88 | 0.82 |
| 1SV21CS003 | 2 | 1 | 3 | 2 | 2 | 4 | 2 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 10.6 | 11.6 | 10.6 | 10.6 | 11.6 | 0.31 | 0.26 | 0.31 | 0.31 | 0.34 |
| 1SV21CS004 | 15 | 8 | 23 | 15 | 7 | 22 | 15 | 9 | 24 | 4 | 4 | 4 | 4 | 4 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 37 | 26.4 | 34.4 | 18.4 | 26.4 | 20.4 | 0.78 | 0.78 | 0.54 | 0.78 | 0.60 |
| 1SV21CS005 | 3 | 9 | 12 | 3 | 8 | 11 | 3 | 10 | 13 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 11.8 | 20.8 | 16.8 | 11.8 | 18.8 | 0.35 | 0.47 | 0.49 | 0.35 | 0.55 |
| 1SV21CS006 | 12 | 12 | 24 | 12 | 11 | 23 | 12 | 13 | 25 | 4 | 4 | 4 | 4 | 4 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 44 | 24.8 | 36.8 | 23.8 | 24.8 | 25.8 | 0.73 | 0.84 | 0.70 | 0.73 | 0.76 |
| 1SV21CS008 | 16 | 11 | 27 | 16 | 10 | 26 | 16 | 12 | 28 | 4 | 4 | 4 | 4 | 4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 41 | 28.2 | 39.2 | 22.2 | 28.2 | 24.2 | 0.83 | 0.89 | 0.65 | 0.83 | 0.71 |
| 1SV21CS009 | 13 | 13 | 26 | 13 | 12 | 25 | 13 | 14 | 27 | 4 | 4 | 4 | 4 | 4 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 43 | 25.6 | 38.6 | 24.6 | 25.6 | 26.6 | 0.75 | 0.88 | 0.72 | 0.75 | 0.78 |
| 1SV21CS010 | 16 | 7 | 23 | 16 | 6 | 22 | 16 | 8 | 24 | 4 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 7 | 7 | 35 | 27 | 34 | 17 | 27 | 19 | 0.79 | 0.77 | 0.50 | 0.79 | 0.56 |
| 1SV21CS011 | 12 | 3 | 15 | 12 | 2 | 14 | 12 | 4 | 16 | 4 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 7 | 7 | 35 | 23 | 26 | 13 | 23 | 15 | 0.68 | 0.59 | 0.38 | 0.68 | 0.44 |
| 1SV21CS012 | 17 | 9 | 26 | 17 | 8 | 25 | 17 | 10 | 27 | 4 | 4 | 4 | 4 | 4 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 44 | 29.8 | 38.8 | 20.8 | 29.8 | 22.8 | 0.88 | 0.88 | 0.61 | 0.88 | 0.67 |
| 1SV21CS013 | 16 | 7 | 23 | 16 | 6 | 22 | 16 | 8 | 24 | 4 | 4 | 4 | 4 | 4 | 9 | 9 | 9 | 9 | 9 | 45 | 29 | 36 | 19 | 29 | 21 | 0.85 | 0.82 | 0.56 | 0.85 | 0.62 |
| 1SV21CS014 | 19 | 5 | 24 | 19 | 4 | 23 | 19 | 6 | 25 | 4 | 4 | 4 | 4 | 4 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 38 | 30.6 | 35.6 | 15.6 | 30.6 | 17.6 | 0.90 | 0.81 | 0.46 | 0.90 | 0.52 |
| 1SV21CS015 | 12 | 16 | 28 | 12 | 15 | 27 | 12 | 17 | 29 | 4 | 4 | 4 | 4 | 4 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 48 | 25.6 | 41.6 | 28.6 | 25.6 | 30.6 | 0.75 | 0.95 | 0.84 | 0.75 | 0.90 |
| 1SV21CS016 | 16 | 13 | 29 | 16 | 13 | 29 | 16 | 13 | 29 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 29.2 | 42.2 | 26.2 | 29.2 | 26.2 | 0.86 | 0.96 | 0.77 | 0.86 | 0.77 |
| 1SV21CS017 | 11 | 11 | 22 | 11 | 12 | 23 | 11 | 10 | 21 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 24.2 | 35.2 | 25.2 | 24.2 | 23.2 | 0.71 | 0.80 | 0.74 | 0.71 | 0.68 |
| 1SV21CS018 | 15 | 15 | 30 | 15 | 15 | 30 | 15 | 15 | 30 | 4 | 4 | 4 | 4 | 4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 47 | 28.4 | 43.4 | 28.4 | 28.4 | 28.4 | 0.84 | 0.99 | 0.84 | 0.84 | 0.84 |
| 1SV21CS019 | 12 | 10 | 22 | 12 | 10 | 22 | 12 | 10 | 22 | 4 | 4 | 4 | 4 | 4 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 34 | 22.8 | 32.8 | 20.8 | 22.8 | 20.8 | 0.67 | 0.75 | 0.61 | 0.67 | 0.61 |
| 1SV21CS020 | 17 | 9 | 26 | 17 | 8 | 25 | 17 | 10 | 27 | 4 | 4 | 4 | 4 | 4 | 9 | 9 | 9 | 9 | 9 | 45 | 30 | 39 | 21 | 30 | 23 | 0.88 | 0.89 | 0.62 | 0.88 | 0.68 |
| 1SV21CS021 | 19 | 0 | 19 | 19 | 0 | 19 | 19 | 0 | 19 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 25 | 28 | 28 | 9 | 28 | 9 | 0.82 | 0.64 | 0.26 | 0.82 | 0.26 |
| 1SV21CS022 | 13 | 15 | 28 | 13 | 15 | 28 | 13 | 15 | 28 | 4 | 4 | 4 | 4 | 4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 47 | 26.4 | 41.4 | 28.4 | 26.4 | 28.4 | 0.78 | 0.94 | 0.84 | 0.78 | 0.84 |
| 1SV21CS023 | 11 | 8 | 19 | 11 | 8 | 19 | 11 | 8 | 19 | 4 | 4 | 4 | 4 | 4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 41 | 23.2 | 31.2 | 20.2 | 23.2 | 20.2 | 0.68 | 0.71 | 0.59 | 0.68 | 0.59 |
| 1SV21CS024 | 16 | 8 | 24 | 16 | 8 | 24 | 16 | 8 | 24 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 29.2 | 37.2 | 21.2 | 29.2 | 21.2 | 0.86 | 0.85 | 0.62 | 0.86 | 0.62 |
| 1SV21CS025 | 13 | 10 | 23 | 13 | 10 | 23 | 13 | 10 | 23 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 26.2 | 36.2 | 23.2 | 26.2 | 23.2 | 0.77 | 0.82 | 0.68 | 0.77 | 0.68 |
| 1SV21CS026 | 11 | 13 | 24 | 11 | 13 | 24 | 11 | 13 | 24 | 4 | 4 | 4 | 4 | 4 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 44 | 23.8 | 36.8 | 25.8 | 23.8 | 25.8 | 0.70 | 0.84 | 0.76 | 0.70 | 0.76 |
| 1SV21CS027 | 14 | 12 | 26 | 14 | 12 | 26 | 14 | 12 | 26 | 4 | 4 | 4 | 4 | 4 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 39 | 25.8 | 37.8 | 23.8 | 25.8 | 23.8 | 0.76 | 0.86 | 0.70 | 0.76 | 0.70 |
| 1SV21CS028 | 17 | 2 | 19 | 17 | 2 | 19 | 17 | 2 | 19 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 25.8 | 27.8 | 10.8 | 25.8 | 10.8 | 0.76 | 0.63 | 0.32 | 0.76 | 0.32 |
| 1SV21CS029 | 11 | 6 | 17 | 11 | 6 | 17 | 11 | 6 | 17 | 4 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 7 | 7 | 35 | 22 | 28 | 17 | 22 | 17 | 0.65 | 0.64 | 0.50 | 0.65 | 0.50 |
| 1SV21CS030 | 15 | 12 | 27 | 15 | 12 | 27 | 15 | 12 | 27 | 4 | 4 | 4 | 4 | 4 | 6.4 | 6 | 6 | 6 | 6 | 32 | 25.4 | 37 | 22 | 25 | 22 | 0.75 | 0.84 | 0.65 | 0.74 | 0.65 |
| 1SV21CS031 | 2 | 1 | 3 | 2 | 3 | 5 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 34 | 12.8 | 13.8 | 13.8 | 12.8 | 12.8 | 0.38 | 0.31 | 0.41 | 0.38 | 0.38 |
| 1SV21CS032 | 11 | 2 | 13 | 11 | 2 | 13 | 11 | 2 | 13 | 4 | 4 | 4 | 4 | 4 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 20.2 | 22.2 | 11.2 | 20.2 | 11.2 | 0.59 | 0.50 | 0.33 | 0.59 | 0.33 |
| 1SV21CS033 | 12 | 14 | 26 | 12 | 13 | 25 | 12 | 15 | 27 | 4 | 4 | 4 | 4 | 4 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 38 | 23.6 | 37.6 | 24.6 | 23.6 | 26.6 | 0.69 | 0.85 | 0.72 | 0.69 | 0.78 |
| 1SV21CS034 | 15 | 3 | 18 | 15 | 2 | 17 | 15 | 4 | 19 | 4 | 4 | 4 | 4 | 4 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 24.8 | 27.8 | 11.8 | 24.8 | 13.8 | 0.73 | 0.63 | 0.35 | 0.73 | 0.41 |
| 1SV21CS035 | 13 | 16 | 29 | 13 | 16 | 29 | 13 | 16 | 29 | 4 | 4 | 4 | 4 | 4 | 9.6 | 9.6 | 9.6 | 9.6 | 9.6 | 48 | 26.6 | 42.6 | 29.6 | 26.6 | 29.6 | 0.78 | 0.97 | 0.87 | 0.78 | 0.87 |
| 1SV21CS036 | 12 | 13 | 25 | 12 | 13 | 25 | 12 | 13 | 25 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 25.2 | 38.2 | 26.2 | 25.2 | 26.2 | 0.74 | 0.87 | 0.77 | 0.74 | 0.77 |
| 1SV21CS037 | 14 | 7 | 21 | 14 | 7 | 21 | 14 | 7 | 21 | 4 | 4 | 4 | 4 | 4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 41 | 26.2 | 33.2 | 19.2 | 26.2 | 19.2 | 0.77 | 0.75 | 0.56 | 0.77 | 0.56 |
| 1SV21CS038 | 16 | 10 | 26 | 16 | 10 | 26 | 16 | 10 | 26 | 4 | 4 | 4 | 4 | 4 | 9.8 | 9.8 | 9.8 | 9.8 | 9.8 | 49 | 29.8 | 39.8 | 23.8 | 29.8 | 23.8 | 0.88 | 0.90 | 0.70 | 0.88 | 0.70 |
| 1SV21CS039 | 11 | 1 | 12 | 11 | 1 | 12 | 11 | 1 | 12 | 4 | 4 | 4 | 4 | 4 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 20.2 | 21.2 | 10.2 | 20.2 | 10.2 | 0.59 | 0.48 | 0.30 | 0.59 | 0.30 |
| 1SV21CS040 | 14 | 10 | 24 | 14 | 10 | 24 | 14 | 10 | 24 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 27.2 | 37.2 | 23.2 | 27.2 | 23.2 | 0.80 | 0.85 | 0.68 | 0.80 | 0.68 |
| 1SV21CS041 | 18 | 5 | 23 | 18 | 5 | 23 | 18 | 5 | 23 | 4 | 4 | 4 | 4 | 4 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 44 | 30.8 | 35.8 | 17.8 | 30.8 | 17.8 | 0.91 | 0.81 | 0.52 | 0.91 | 0.52 |
| 1SV21CS042 | 17 | 13 | 30 | 17 | 13 | 30 | 17 | 13 | 30 | 4 | 4 | 4 | 4 | 4 | 9.8 | 9.8 | 9.8 | 9.8 | 9.8 | 49 | 30.8 | 43.8 | 26.8 | 30.8 | 26.8 | 0.91 | 1.00 | 0.79 | 0.91 | 0.79 |
| 1SV21CS043 | 13 | 6 | 19 | 13 | 6 | 19 | 13 | 6 | 19 | 4 | 4 | 4 | 4 | 4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 23.4 | 29.4 | 16.4 | 23.4 | 16.4 | 0.69 | 0.67 | 0.48 | 0.69 | 0.48 |
| 1SV21CS044 | 11 | 10 | 21 | 11 | 10 | 21 | 11 | 10 | 21 | 4 | 4 | 4 | 4 | 4 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 39 | 22.8 | 32.8 | 21.8 | 22.8 | 21.8 | 0.67 | 0.75 | 0.64 | 0.67 | 0.64 |
| 1SV21CS045 | 13 | 15 | 28 | 13 | 15 | 28 | 13 | 15 | 28 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 26.2 | 41.2 | 28.2 | 26.2 | 28.2 | 0.77 | 0.94 | 0.83 | 0.77 | 0.83 |
| 1SV21CS046 | 12 | 2 | 14 | 12 | 2 | 14 | 12 | 2 | 14 | 4 | 4 | 4 | 4 | 4 | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 | 42 | 24.4 | 26.4 | 14.4 | 24.4 | 14.4 | 0.72 | 0.60 | 0.42 | 0.72 | 0.42 |
| 1SV21CS047 | 4 | 1 | 5 | 4 | 2 | 6 | 4 | 3 | 7 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 9 | 6 | 8 | 7 | 0.24 | 0.20 | 0.18 | 0.24 | 0.21 |
| 1SV21CS048 | 14 | 10 | 24 | 14 | 10 | 24 | 14 | 10 | 24 | 4 | 4 | 4 | 4 | 4 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 25.2 | 35.2 | 21.2 | 25.2 | 21.2 | 0.74 | 0.80 | 0.62 | 0.74 | 0.62 |
| 1SV21CS049 | 11 | 15 | 26 | 11 | 16 | 27 | 11 | 14 | 25 | 4 | 4 | 4 | 4 | 4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 47 | 24.4 | 39.4 | 29.4 | 24.4 | 27.4 | 0.72 | 0.90 | 0.86 | 0.72 | 0.81 |
| 1SV21CS050 | 17 | 9 | 26 | 17 | 9 | 26 | 17 | 9 | 26 | 4 | 4 | 4 | 4 | 4 | 9 | 9 | 9 | 9 | 9 | 45 | 30 | 39 | 22 | 30 | 22 | 0.88 | 0.89 | 0.65 | 0.88 | 0.65 |
| 1SV21CS051 | 4 | 2 | 6 | 4 | 1 | 5 | 4 | 3 | 7 | 4 | 4 | 4 | 4 | 4 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 12.2 | 14.2 | 9.2 | 12.2 | 11.2 | 0.36 | 0.32 | 0.27 | 0.36 | 0.33 |
| 1SV21CS052 | 19 | 5 | 24 | 19 | 5 | 24 | 19 | 5 | 24 | 4 | 4 | 4 | 4 | 4 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 44 | 31.8 | 36.8 | 17.8 | 31.8 | 17.8 | 0.94 | 0.84 | 0.52 | 0.94 | 0.52 |
| 1SV21CS053 | 11 | 1 | 12 | 11 | 2 | 13 | 11 | 0 | 11 | 4 | 4 | 4 | 4 | 4 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 20.2 | 21.2 | 11.2 | 20.2 | 9.2 | 0.59 | 0.48 | 0.33 | 0.59 | 0.27 |
| 1SV21CS054 | 18 | 3 | 21 | 18 | 3 | 21 | 18 | 3 | 21 | 4 | 4 | 4 | 4 | 4 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 38 | 29.6 | 32.6 | 14.6 | 29.6 | 14.6 | 0.87 | 0.74 | 0.43 | 0.87 | 0.43 |
| 1SV21CS055 | 13 | 15 | 28 | 13 | 15 | 28 | 13 | 15 | 28 | 4 | 4 | 4 | 4 | 4 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 22.6 | 37.6 | 24.6 | 22.6 | 24.6 | 0.66 | 0.85 | 0.72 | 0.66 | 0.72 |
| 1SV21CS056 | 12 | 7 | 19 | 12 | 7 | 19 | 12 | 7 | 19 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 25.2 | 32.2 | 20.2 | 25.2 | 20.2 | 0.74 | 0.73 | 0.59 | 0.74 | 0.59 |
| 1SV21CS057 | 17 | 5 | 22 | 17 | 5 | 22 | 17 | 5 | 22 | 4 | 4 | 4 | 4 | 4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 26.4 | 31.4 | 14.4 | 26.4 | 14.4 | 0.78 | 0.71 | 0.42 | 0.78 | 0.42 |
| 1SV21CS058 | 11 | 14 | 25 | 11 | 14 | 25 | 11 | 14 | 25 | 4 | 4 | 4 | 4 | 4 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 22.2 | 36.2 | 25.2 | 22.2 | 25.2 | 0.65 | 0.82 | 0.74 | 0.65 | 0.74 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1SV21CS059 | 15 | 11 | 26 | 15 | 11 | 26 | 15 | 11 | 26 | 4 | 4 | 4 | 4 | 4 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 46 | 28.2 | 39.2 | 24.2 | 28.2 | 24.2 | 0.83 | 0.89 | 0.71 | 0.83 | 0.71 |
| 1SV21CS060 | 16 | 11 | 27 | 16 | 11 | 27 | 16 | 11 | 27 | 4 | 4 | 4 | 4 | 4 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 47 | 29.4 | 40.4 | 24.4 | 29.4 | 24.4 | 0.86 | 0.92 | 0.72 | 0.86 | 0.72 |
| 1SV21CS061 | 15 | 6 | 21 | 15 | 7 | 22 | 15 | 5 | 20 | 4 | 4 | 4 | 4 | 4 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 39 | 26.8 | 32.8 | 18.8 | 26.8 | 16.8 | 0.79 | 0.75 | 0.55 | 0.79 | 0.49 |
| 1SV21CS062 | 11 | 10 | 21 | 11 | 9 | 20 | 11 | 11 | 22 | 4 | 4 | 4 | 4 | 4 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 33 | 21.6 | 31.6 | 19.6 | 21.6 | 21.6 | 0.64 | 0.72 | 0.58 | 0.64 | 0.64 |
| 1SV21CS063 | 13 | 14 | 27 | 13 | 14 | 27 | 13 | 14 | 27 | 4 | 4 | 4 | 4 | 4 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 41 | 25.2 | 39.2 | 26.2 | 25.2 | 26.2 | 0.74 | 0.89 | 0.77 | 0.74 | 0.77 |
| 1SV21CS064 | 2 | 3 | 5 | 2 | 2 | 4 | 2 | 4 | 6 | 4 | 4 | 4 | 4 | 4 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 9.8 | 12.8 | 9.8 | 9.8 | 11.8 | 0.29 | 0.29 | 0.29 | 0.29 | 0.35 |
| 1SV21CS065 | 2 | 2 | 4 | 2 | 4 | 6 | 2 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 6 | 7.2 | 9.2 | 9.2 | 7.2 | 8.2 | 0.21 | 0.21 | 0.27 | 0.21 | 0.24 |
| 1SV21CS066 | 1 | 7 | 8 | 1 | 6 | 7 | 1 | 8 | 9 | 4 | 4 | 4 | 4 | 4 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 34 | 11.8 | 18.8 | 16.8 | 11.8 | 18.8 | 0.35 | 0.43 | 0.49 | 0.35 | 0.55 |
| 1SV21CS067 | 13 | 2 | 15 | 13 | 2 | 15 | 13 | 2 | 15 | 4 | 4 | 4 | 4 | 4 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 31 | 23.2 | 25.2 | 12.2 | 23.2 | 12.2 | 0.68 | 0.57 | 0.36 | 0.68 | 0.36 |
| 1SV21CS068 | 12 | 16 | 28 | 12 | 15 | 27 | 12 | 17 | 29 | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 30 | 22 | 38 | 25 | 22 | 27 | 0.65 | 0.86 | 0.74 | 0.65 | 0.79 |
| 1SV21CS069 | 4 | 6 | 10 | 4 | 5 | 9 | 4 | 7 | 11 | 4 | 4 | 4 | 4 | 4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 7 | 9.4 | 15.4 | 10.4 | 9.4 | 12.4 | 0.28 | 0.35 | 0.31 | 0.28 | 0.36 |
| 1SV21CS070 | 13 | 13 | 26 | 13 | 12 | 25 | 13 | 14 | 27 | 4 | 4 | 4 | 4 | 4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 23.4 | 36.4 | 22.4 | 23.4 | 24.4 | 0.69 | 0.83 | 0.66 | 0.69 | 0.72 |
| 1SV21CS071 | 13 | 16 | 29 | 13 | 16 | 29 | 13 | 16 | 29 | 4 | 4 | 4 | 4 | 4 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 39 | 24.8 | 40.8 | 27.8 | 24.8 | 27.8 | 0.73 | 0.93 | 0.82 | 0.73 | 0.82 |
| 1SV21CS072 | 11 | 16 | 27 | 11 | 16 | 27 | 11 | 16 | 27 | 4 | 4 | 4 | 4 | 4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 20.4 | 36.4 | 25.4 | 20.4 | 25.4 | 0.60 | 0.83 | 0.75 | 0.60 | 0.75 |
| 1SV21CS073 | 13 | 14 | 27 | 13 | 14 | 27 | 13 | 14 | 27 | 4 | 4 | 4 | 4 | 4 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 22.6 | 36.6 | 23.6 | 22.6 | 23.6 | 0.66 | 0.83 | 0.69 | 0.66 | 0.69 |
| 1SV21CS074 | 1 | 5 | 6 | 1 | 4 | 5 | 1 | 6 | 7 | 4 | 4 | 4 | 4 | 4 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 8.8 | 13.8 | 11.8 | 8.8 | 13.8 | 0.26 | 0.31 | 0.35 | 0.26 | 0.41 |
| 1SV21CS075 | 9 | 2 | 11 | 9 | 2 | 11 | 9 | 2 | 11 | 4 | 4 | 4 | 4 | 4 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 17.6 | 19.6 | 10.6 | 17.6 | 10.6 | 0.52 | 0.45 | 0.31 | 0.52 | 0.31 |
| 1SV21CS076 | 13 | 13 | 26 | 13 | 13 | 26 | 13 | 13 | 26 | 4 | 4 | 4 | 4 | 4 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 22.6 | 35.6 | 22.6 | 22.6 | 22.6 | 0.66 | 0.81 | 0.66 | 0.66 | 0.66 |
| 1SV21CS077 | 12 | 11 | 23 | 12 | 11 | 23 | 12 | 11 | 23 | 4 | 4 | 4 | 4 | 4 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 20.6 | 31.6 | 19.6 | 20.6 | 19.6 | 0.61 | 0.72 | 0.58 | 0.61 | 0.58 |
| 1SV21CS078 | 11 | 14 | 25 | 11 | 14 | 25 | 11 | 14 | 25 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 19.8 | 33.8 | 22.8 | 19.8 | 22.8 | 0.58 | 0.77 | 0.67 | 0.58 | 0.67 |
| 1SV21CS079 | 10 | 17 | 27 | 10 | 17 | 27 | 10 | 17 | 27 | 4 | 4 | 4 | 4 | 4 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 19.6 | 36.6 | 26.6 | 19.6 | 26.6 | 0.58 | 0.83 | 0.78 | 0.58 | 0.78 |
| 1SV21CS080 | 16 | 11 | 27 | 16 | 11 | 27 | 16 | 11 | 27 | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 30 | 26 | 37 | 21 | 26 | 21 | 0.76 | 0.84 | 0.62 | 0.76 | 0.62 |
| 1SV21CS081 | 5 | 1 | 6 | 5 | 0 | 5 | 5 | 2 | 7 | 4 | 4 | 4 | 4 | 4 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 18 | 12.6 | 13.6 | 7.6 | 12.6 | 9.6 | 0.37 | 0.31 | 0.22 | 0.37 | 0.28 |
| 1SV21CS082 | 13 | 15 | 28 | 13 | 15 | 28 | 13 | 15 | 28 | 4 | 4 | 4 | 4 | 4 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 33 | 23.6 | 38.6 | 25.6 | 23.6 | 25.6 | 0.69 | 0.88 | 0.75 | 0.69 | 0.75 |
| 1SV21CS083 | 13 | 5 | 18 | 13 | 5 | 18 | 13 | 5 | 18 | 4 | 4 | 4 | 4 | 4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 22 | 21.4 | 26.4 | 13.4 | 21.4 | 13.4 | 0.63 | 0.60 | 0.39 | 0.63 | 0.39 |
| 1SV21CS084 | 5 | 4 | 9 | 5 | 4 | 9 | 5 | 4 | 9 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 10 | 11 | 15 | 10 | 11 | 10 | 0.32 | 0.34 | 0.29 | 0.32 | 0.29 |
| 1SV21CS085 | 3 | 2 | 5 | 3 | 2 | 5 | 3 | 2 | 5 | 4 | 4 | 4 | 4 | 4 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 9 | 8.8 | 10.8 | 7.8 | 8.8 | 7.8 | 0.26 | 0.25 | 0.23 | 0.26 | 0.23 |
| 1SV21CS086 | 18 | 10 | 28 | 18 | 10 | 28 | 18 | 10 | 28 | 4 | 4 | 4 | 4 | 4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 28.4 | 38.4 | 20.4 | 28.4 | 20.4 | 0.84 | 0.87 | 0.60 | 0.84 | 0.60 |
| 1SV21CS087 | 7 | 3 | 10 | 7 | 3 | 10 | 7 | 3 | 10 | 4 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 10 | 13 | 16 | 9 | 13 | 9 | 0.38 | 0.36 | 0.26 | 0.38 | 0.26 |
| 1SV21CV001 | 8 | 6 | 14 | 6 | 8 | 14 | 7 | 14 | 14 | 4 | 4 | 4 | 4 | 4 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 17.6 | 21.6 | 17.6 | 16.6 | 23.6 | 0.52 | 0.49 | 0.52 | 0.49 | 0.69 |
| 1SV21CV002 | 3 | 3 | 6 | 2 | 3 | 5 | 3 | 4 | 7 | 4 | 4 | 4 | 4 | 4 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 9 | 8.8 | 10.8 | 8.8 | 8.8 | 9.8 | 0.26 | 0.25 | 0.26 | 0.26 | 0.29 |
| 1SV21CV003 | 12 | 1 | 13 | 11 | 2 | 13 | 2 | 11 | 13 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 20.8 | 20.8 | 10.8 | 10.8 | 19.8 | 0.61 | 0.47 | 0.32 | 0.32 | 0.58 |
| 1SV21CV004 | 7 | 6 | 13 | 4 | 9 | 13 | 5 | 8 | 13 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 15.8 | 18.8 | 17.8 | 13.8 | 16.8 | 0.46 | 0.43 | 0.52 | 0.41 | 0.49 |
| 1SV21CV005 | 2 | 4 | 6 | 4 | 1 | 5 | 4 | 3 | 7 | 4 | 4 | 4 | 4 | 4 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 6 | 7.2 | 13.2 | 6.2 | 9.2 | 8.2 | 0.21 | 0.30 | 0.18 | 0.27 | 0.24 |
| 1SV21CV006 | 2 | 5 | 7 | 2 | 4 | 6 | 4 | 4 | 8 | 4 | 4 | 4 | 4 | 4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 7 | 7.4 | 12.4 | 9.4 | 9.4 | 9.4 | 0.22 | 0.28 | 0.28 | 0.28 | 0.28 |
| 1SV21CV007 | 3 | 7 | 10 | 4 | 5 | 9 | 2 | 9 | 11 | 4 | 4 | 4 | 4 | 4 | 6 | 6 | 6 | 6 | 6 | 30 | 13 | 21 | 15 | 12 | 19 | 0.38 | 0.48 | 0.44 | 0.35 | 0.56 |
| 1SV21CV008 | 4 | 5 | 9 | 3 | 6 | 9 | 4 | 5 | 9 | 4 | 4 | 4 | 4 | 4 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 6 | 9.2 | 13.2 | 11.2 | 9.2 | 10.2 | 0.27 | 0.30 | 0.33 | 0.27 | 0.30 |
| 1SV21CV010 | 5 | 6 | 11 | 3 | 8 | 11 | 4 | 7 | 11 | 4 | 4 | 4 | 4 | 4 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 14 | 11.8 | 15.8 | 14.8 | 10.8 | 13.8 | 0.35 | 0.36 | 0.44 | 0.32 | 0.41 |
| 1SV21CV011 | 3 | 2 | 5 | 3 | 1 | 4 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 4 | 1.4 | 1.4 | 1.4 | 1.4 | 1.4 | 7 | 8.4 | 10.4 | 6.4 | 7.4 | 7.4 | 0.25 | 0.24 | 0.19 | 0.22 | 0.22 |
| 1SV21CV012 | 4 | 3 | 7 | 2 | 5 | 7 | 3 | 4 | 7 | 4 | 4 | 4 | 4 | 4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 13 | 10.6 | 11.6 | 11.6 | 9.6 | 10.6 | 0.31 | 0.26 | 0.34 | 0.28 | 0.31 |
| 1SV21CV013 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 0.12 | 0.09 | 0.12 | 0.12 | 0.12 |
| 1SV21CV014 | 3 | 3 | 6 | 2 | 4 | 6 | 1 | 5 | 6 | 4 | 4 | 4 | 4 | 4 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 6 | 8.2 | 10.2 | 9.2 | 6.2 | 10.2 | 0.24 | 0.23 | 0.27 | 0.18 | 0.30 |
| 1SV21CV015 | 17 | 6 | 23 | 11 | 11 | 22 | 13 | 11 | 24 | 4 | 4 | 4 | 4 | 4 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 26.2 | 26.2 | 20.2 | 22.2 | 20.2 | 0.77 | 0.60 | 0.59 | 0.65 | 0.59 |
| 1SV21EE001 | 3 | 3 | 6 | 1 | 4 | 5 | 2 | 5 | 7 | 4 | 4 | 4 | 4 | 4 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 9 | 8.8 | 9.8 | 9.8 | 7.8 | 10.8 | 0.26 | 0.22 | 0.29 | 0.23 | 0.32 |
| 1SV21EE002 | 11 | 3 | 14 | 12 | 2 | 14 | 13 | 1 | 14 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 19.8 | 23.8 | 10.8 | 21.8 | 9.8 | 0.58 | 0.54 | 0.32 | 0.64 | 0.29 |
| 1SV21EE003 | 19 | 9 | 28 | 15 | 12 | 27 | 11 | 18 | 29 | 4 | 4 | 4 | 4 | 4 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 28.8 | 33.8 | 21.8 | 20.8 | 27.8 | 0.85 | 0.77 | 0.64 | 0.61 | 0.82 |
| 1SV21EE005 | 9 | 3 | 12 | 1 | 11 | 12 | 8 | 4 | 12 | 4 | 4 | 4 | 4 | 4 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 18.6 | 13.6 | 20.6 | 17.6 | 13.6 | 0.55 | 0.31 | 0.61 | 0.52 | 0.40 |
| 1SV21EE006 | 18 | 11 | 29 | 19 | 9 | 28 | 14 | 16 | 30 | 4 | 4 | 4 | 4 | 4 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 39 | 29.8 | 41.8 | 20.8 | 25.8 | 27.8 | 0.88 | 0.95 | 0.61 | 0.76 | 0.82 |
| TOTAL | 1172 | 831 | 2003 | 1144 | 838 | 1982 | 1141 | 903 | 2037 | 420 | 420 | 420 | 420 | 420 | 653 | 653 | 652.6 | 652.6 | 652.6 | 3265 | 2245 | 3048 | 1911 | 2214 | 1975.6 | 66.0 | 69.3 | 56.2 | 65.1 | 58.1 |
| No of Students | 105 | 0 | 105 | 105 | 0 | 105 | 105 | 0 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 | 105 |
| Average | 11.16 | 7.91 | 19.08 | 10.90 | 7.98 | 18.88 | 10.87 | 8.53 | 19.40 | 4 | 4 | 4 | 4 | 4 | 6.22 | 6.22 | 6.22 | 6.22 | 6.22 | 31.10 | 21.38 | 29.02 | 18.20 | 21.08 | 18.82 | 62.89 | 65.97 | 53.52 | 62.01 | 55.34 |

20-21 odd 18-19 odd. 19-20 even

# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY
## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | BASIC ELECTRICAL ENGINEERING | SUBJECT CODE | 18ELE23 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Analysis of Resistive Circuits and Solution of resistive circuits with independent sources |
| CO2 | Two Terminal Element Relationships for inductors and capacitors and analysis of magnetic circuits. |
| CO3 | Discuss the laws of illumination, different types of lamps, lighting schemes and design of lighting systems. |
| CO4 | Analysis of Single Phase AC Circuits, the representation of alternating quantities and determining the power in these circuits. |
| CO5 | Analysis of Single Phase AC Circuits, the representation of alternating quantities and determining the power in these circuits. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering & Technology
TUMKUR-572106

PRINCIPAL
SIET, TUMAKURU

PRINCIPAL

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | TABUJA K S | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-21 | | |
| COURSE | B.E | SEMESTER | I | SECTION | EEE |
| SUBJECT | BASIC ELECTRICAL ENGINEERING | | SUBJECT CODE | 18ELE13 | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| CO1 | 3 | 3 | | | | | | | | | | |
| CO2 | 3 | 2 | | | | | | | | | | |
| CO3 | 3 | 2 | | | | | | | | | | |
| CO4 | 3 | 2 | | | | | | | | | | |
| CO5 | 3 | 2 | | | | | | | | | | |
| AVERAGE | 3 | 2.2 | | | | | | | | | | |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.6 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 49.39 | 1.48 | 1.48 | | | | | | | | | | |
| CO2 | 45.85 | 1.37 | 0.917 | | | | | | | | | | |
| CO3 | 79.04 | 2.37 | 1.58 | | | | | | | | | | |
| CO4 | 53.53 | 1.60 | 1.07 | | | | | | | | | | |
| CO5 | 55.16 | 1.65 | 1.103 | | | | | | | | | | |
| AVERAGE | 56.59 | 1.69 | 1.23 | | | | | | | | | | |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.46 |

Head of the Department
Electrical & Electronics Engg.
Shridevi Institute of Engineering
TUMKUR-572106

PRINCIPAL
SIET., TUMAKURU.

| Academic year | 2020-21 | | | SEM | | 1 | Total strength | | | 22 | | Subject | BASIC ELECTRICAL ENGINEERING | | | | Subject Code | 18EE15 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IA TEST 1(80M) | | | IA TEST 2(80M) | | | IA TEST 3(80M) | | | ASSIGNMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | Total Co ATTAINMENT | | | | | % of individual CO | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1-12 | CO1 | CO3 | CO4 | CO5 | CO1*29 | CO2*41 | CO3*29 | CO4*29 | CO5*29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SW20CS001 | 9 | 9 | 18 | 4 | 4 | 8 | 11 | 12 | 23 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 16.8 | 20.5 | 11.6 | 18.8 | 19.1 | 24.13 | 37.27273 | 40.68966 | 64.82759 | 68.27586 |
| 1SW20CS002 | 11 | 12 | 23 | 11 | 12 | 23 | 12 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 17.2 | 29.2 | 18.2 | 18.2 | 18.2 | 35.51035 | 56.31364 | 62.75862 | 62.75862 | 62.75862 |
| 1SW20CS003 | 13 | 12 | 25 | 13 | 13 | 26 | 14 | 14 | 28 | 2 | 2 | 2 | 2 | 2 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 19.6 | 33.6 | 21.6 | 22.6 | 22.6 | 47.58621 | 76.36364 | 74.48276 | 77.93103 | 77.93103 |
| 1SW20CS004 | 9 | 8 | 17 | 12 | 12 | 24 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 15.2 | 28.2 | 18.2 | 20.2 | 21.2 | 52.41379 | 59.54545 | 62.75862 | 69.65517 | 73.10345 |
| 1SW20CS005 | 10 | 8 | 18 | 10 | 7 | 17 | 9 | 10 | 19 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 13.8 | 19.8 | 12.8 | 15.8 | 16.8 | 47.58621 | 85 | 44.13793 | 54.48276 | 57.93103 |
| 1SW20CS006 | 11 | 12 | 23 | 7 | 7 | 14 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 18.6 | 34.6 | 13.6 | 13.6 | 13.6 | 64.24138 | 82.72727 | 46.89655 | 46.89655 | 46.89655 |
| 1SW20CS007 | 12 | 9 | 19 | 10 | 8 | 18 | 10 | 11 | 21 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 15.8 | 23.8 | 11.8 | 14.8 | 15.8 | 54.86207 | 69.09091 | 40.68966 | 51.03448 | 54.48276 |
| 1SW20CS008 | 5 | 5 | 10 | 5 | 5 | 10 | 6 | 7 | 13 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 18 | 27 | 19 | 18 | 19 | 62.06897 | 65.81818 | 55.17241 | 62.06897 | 65.51724 |
| 1SW20CS009 | 3 | 2 | 5 | 1 | 3 | 4 | 11 | 12 | 23 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.2 | 19.2 | 11.2 | 12.2 | 13.2 | 38.62069 | 46.81818 | 38.62069 | 42.06897 | 45.51724 |
| 1SW20CS010 | 6 | 7 | 13 | 5 | 5 | 10 | 10 | 11 | 21 | 2 | 2 | 2 | 2 | 2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 17.4 | 18.4 | 11.4 | 16.4 | 17.4 | 60.13793 | 44.81818 | 39.31034 | 56.55172 | 60 |
| 1SW20CS011 | 15 | 15 | 30 | 12 | 12 | 24 | 14 | 14 | 28 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 22.8 | 34.8 | 19.8 | 21.8 | 21.8 | 78.62069 | 84.90909 | 68.27586 | 75.17241 | 75.17241 |
| 1SW20CS012 | 9 | 10 | 19 | 8 | 8 | 16 | 6 | 7 | 13 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 15.2 | 19.2 | 10.2 | 12.2 | 13.2 | 52.41379 | 46.81818 | 35.17241 | 42.06897 | 45.51724 |
| 1SW20CS013 | 12 | 12 | 24 | 7 | 7 | 14 | 15 | 15 | 30 | 2 | 2 | 2 | 2 | 2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 22.2 | 29.2 | 17.2 | 25.2 | 25.2 | 76.55172 | 66.36364 | 59.31034 | 86.89655 | 86.89655 |
| 1SW20CS014 | 14 | 14 | 28 | 10 | 11 | 21 | 15 | 15 | 30 | 2 | 2 | 2 | 2 | 2 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 23.8 | 33.8 | 20.8 | 24.8 | 24.8 | 82.06897 | 75.72818 | 71.72414 | 85.51724 | 85.51724 |
| 1SW20CS015 | 13 | 14 | 27 | 15 | 15 | 30 | 11 | 12 | 23 | 2 | 2 | 2 | 2 | 2 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 24.6 | 33.6 | 25.6 | 21.6 | 22.6 | 84.82759 | 76.36364 | 88.27586 | 74.48276 | 77.93103 |
| 1SW20CS016 | 14 | 14 | 28 | 7 | 7 | 14 | 14 | 14 | 28 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 20.2 | 27.2 | 15.2 | 20.2 | 20.2 | 69.65517 | 61.81818 | 51.72414 | 69.65517 | 69.65517 |
| 1SW20CS017 | 5 | 6 | 11 | 8 | 9 | 17 | 9 | 9 | 18 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 16 | 11 | 11 | 11 | 24.13793 | 36.36364 | 37.93103 | 37.93103 | 37.93103 |
| 1SW20CS018 | 13 | 14 | 27 | 14 | 14 | 28 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 26.6 | 30.6 | 26.6 | 26.6 | 27.6 | 91.72414 | 69.54545 | 91.72414 | 91.72414 | 95.86207 |
| 1SW20CS019 | 9 | 9 | 18 | 5 | 5 | 10 | 6 | 8 | 14 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.2 | 20.2 | 11.2 | 14.2 | 14.2 | 38.62069 | 45.90909 | 38.62069 | 48.96552 | 48.96552 |
| 1SW20CS020 | 15 | 15 | 30 | 15 | 15 | 30 | 15 | 15 | 30 | 2 | 2 | 2 | 2 | 2 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 27.6 | 42.6 | 27.6 | 27.6 | 27.6 | 95.17241 | 96.81818 | 95.17241 | 95.17241 | 95.17241 |
| | | | | | | | | | | | | | | | | | | | | 17.00[illegible] | 26.14[illegible] | 15.96[illegible] | 18.69[illegible] | 19.24[illegible] | [illegible] | [illegible] | 55.08707 | 64.45141 | 66.13229 |

Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering &
TUMKUR-572106.

PRINCIPAL
SIET., TUMAKURU.

| Academic Year | 2020-21 | | | SEM | 1 | | Total strength | | | IV | | Subject | BASIC ELECTRICAL ENGINEERING | | | | Subject Code | 18ELE13 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IA TEST 1(30M) | | | IA TEST 2(30M) | | | IA TEST 3(30M) | | | | ASSIGNEMENT | QUIZ(10 M) | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2+44 | CO3+29 | CO4+29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV20S005 | 7 | 7 | 14 | 6 | 6 | 12 | 5 | 6 | 11 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 33.2 | 19.2 | 12.2 | 13.2 | 12.2 | 45.51724 | 43.63636 | 42.06897 | 38.62069 | 42.06897 |
| 1SV20S006 | 6 | 6 | 12 | 3 | 2 | 5 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 8 | 11 | 4 | 9 | 9 | 27.58621 | 25 | 13.7931 | 31.03448 | 31.03448 |
| 1SV20S008 | 6 | 7 | 13 | 2 | 1 | 3 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 8 | 11 | 3 | 10 | 10 | 27.58621 | 25 | 10.34483 | 41.37931 | 41.37931 |
| 1SV20S012 | 8 | 9 | 17 | 2 | 0 | 2 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 13.2 | 16.2 | 5.2 | 10.2 | 10.2 | 45.51724 | 36.81818 | 17.93103 | 35.17241 | 35.17241 |
| 1SV20S013 | 3 | 2 | 5 | 2 | 1 | 3 | 10 | 11 | 21 | 2 | 2 | 2 | 2 | 2 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 12.4 | 13.4 | 10.4 | 19.4 | 20.4 | 42.75862 | 30.45455 | 35.86207 | 66.89655 | 70.34483 |
| | | | | | | | | | | | | | | | | | | | | 10.96 | 14.18 | 8.96 | 12.36 | 12.76 | 37.7931 | 32.58182 | 24 | 42.62069 | 44 |

Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering & Tech
TUMKUR-572106.

PRINCIPAL
SIET., TUMAKURU.

# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

| SUBJECT | ELECTRIC CIRCUIT ANALYSIS | SUBJECT CODE | 18EE32 |
|---|---|---|---|

**COURSE OUTCOME**

**CO1:** Understand the basic concepts, basic laws and methods of analysis of DC and AC networks and reduce the complexity of network using source shifting, source transformation and network reduction using transformations

**CO2:** Solve complex electric circuits using network theorems

**CO3:** Discuss resonance in series and parallel circuits and also the importance of initial conditions and their evaluation

**CO4:** Synthesize typical waveforms using Laplace transformation

**CO5:** Solve unbalanced three phase systems and also evaluate the performance of two port networks.

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | Mr. G. H. RAVIKUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | III | SECTION | EEE | | | | | | | |
| SUBJECT | ELECTRIC CIRCUIT ANALYSIS | | | SUBJECT CODE | 18EE32 | | | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | 3 | 2 | - | - | - | - | - | - | - | - | 2 |
| CO2 | 2 | 3 | 2 | - | - | - | - | - | - | - | - | 2 |
| CO3 | 1 | 3 | 1 | - | - | - | - | - | - | - | - | 1 |
| CO4 | 3 | 3 | 3 | - | - | - | - | - | - | - | - | 3 |
| CO5 | 2 | 3 | 2 | - | - | - | - | - | - | - | - | 2 |
| AVERAGE | 2 | 3 | 2 | - | - | - | - | - | - | - | - | 2 |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.25 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 57.4 | 1.148 | 1.722 | 1.148 | - | - | - | - | - | - | - | - | 1.148 |
| CO2 | 55.58 | 1.111 | 1.667 | 1.111 | - | - | - | - | - | - | - | - | 1.111 |
| CO3 | 55.58 | 0.555 | 1.667 | 0.555 | - | - | - | - | - | - | - | - | 0.555 |
| CO4 | 57.4 | 1.722 | 1.722 | 1.722 | - | - | - | - | - | - | - | - | 1.722 |
| CO5 | 56.55 | 1.131 | 1.696 | 1.131 | - | - | - | - | - | - | - | - | 1.131 |
| AVERAGE | | 1.133 | 1.694 | 1.133 | - | - | - | - | - | - | - | - | 1,133 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.273 |

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| Academic yea | 2020-21 | | | SEM | III | Total strength | | | 17 | Subject | ELECTRIC CIRCUIT ANALYSIS | | | | | Subject Code | 18EE32 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:III | IA TEST 1(30M) | | | IA TEST 2(30M) | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total COs ATTAINMENT | | | | | % of Individual CO | | | | | SEE Tot |
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO5 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=29 | CO3=29 | CO4=29 | CO5=44 | CO1 | CO2 | CO3 | CO4 | CO5 | 60M |
| 1SV18EE001 | 13 | 10 | 23 | 10 | 13 | 23 | 13 | 10 | 23 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 17.8 | 14.8 | 14.8 | 17.8 | 25 | 61.38 | 51.03 | 51.03 | 61.38 | 56.82 | 14 |
| 1SV19EE001 | 15 | 14 | 29 | 14 | 15 | 29 | 15 | 14 | 29 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 22 | 21 | 21 | 22 | 31 | 75.86 | 72.41 | 72.41 | 75.86 | 70.45 | 25 |
| 1SV19EE002 | 12 | 12 | 24 | 12 | 12 | 24 | 12 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 16.4 | 16.4 | 16.4 | 16.4 | 26 | 56.55 | 56.55 | 56.55 | 56.55 | 59.09 | 12 |
| 1SV19EE005 | 13 | 13 | 26 | 13 | 13 | 26 | 13 | 13 | 26 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 19.2 | 19.2 | 19.2 | 19.2 | 28 | 66.21 | 66.21 | 66.21 | 66.21 | 63.64 | 21 |
| 1SV19EE006 | 7 | 7 | 14 | 7 | 7 | 14 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 11.4 | 11.4 | 11.4 | 11.4 | 16 | 39.31 | 39.31 | 39.31 | 39.31 | 36.36 | 12 |
| 1SV19EE007 | 13 | 12 | 25 | 12 | 13 | 25 | 13 | 12 | 25 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 21 | 20 | 20 | 21 | 27 | 72.41 | 68.97 | 68.97 | 72.41 | 61.36 | 30 |
| 1SV19EE008 | 12 | 13 | 25 | 13 | 12 | 25 | 12 | 13 | 25 | 2 | 2 | 2 | 2 | 2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 15.2 | 16.2 | 16.2 | 15.2 | 27 | 52.41 | 55.86 | 55.86 | 52.41 | 61.36 | 6 |
| 1SV19EE009 | 7 | 7 | 14 | 7 | 7 | 14 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 9.4 | 9.4 | 9.4 | 9.4 | 16 | 32.41 | 32.41 | 32.41 | 32.41 | 36.36 | 2 |
| 1SV19EE011 | 15 | 14 | 29 | 14 | 15 | 29 | 15 | 14 | 29 | 2 | 2 | 2 | 2 | 2 | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 | 25.4 | 24.4 | 24.4 | 25.4 | 31 | 87.59 | 84.14 | 84.14 | 87.59 | 70.45 | 42 |
| 1SV19EE012 | 11 | 10 | 21 | 10 | 11 | 21 | 11 | 10 | 21 | 2 | 2 | 2 | 2 | 2 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 15.4 | 14.4 | 14.4 | 15.4 | 23 | 53.10 | 49.66 | 49.66 | 53.10 | 52.27 | 12 |
| 1SV19EE014 | 11 | 11 | 22 | 11 | 11 | 22 | 11 | 11 | 22 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 13 | 13 | 13 | 13 | 24 | 44.83 | 44.83 | 44.83 | 44.83 | 54.55 | 0 |
| 1SV19EE016 | 13 | 13 | 26 | 13 | 13 | 26 | 13 | 13 | 26 | 2 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 16 | 16 | 16 | 16 | 28 | 55.17 | 55.17 | 55.17 | 55.17 | 63.64 | 5 |
| 1SV19EE017 | 15 | 15 | 30 | 15 | 15 | 30 | 15 | 15 | 30 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21.2 | 21.2 | 21.2 | 21.2 | 32 | 73.10 | 73.10 | 73.10 | 73.10 | 72.73 | 21 |
| 1SV19EE020 | 12 | 12 | 24 | 12 | 12 | 24 | 12 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 16.8 | 16.8 | 16.8 | 16.8 | 26 | 57.93 | 57.93 | 57.93 | 57.93 | 59.09 | 14 |
| 1SV20EE400 | 10 | 10 | 20 | 10 | 10 | 20 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 14.8 | 14.8 | 14.8 | 14.8 | 22 | 51.03 | 51.03 | 51.03 | 51.03 | 50.00 | 14 |
| 1SV20EE401 | 8 | 7 | 15 | 7 | 8 | 15 | 8 | 7 | 15 | 2 | 2 | 2 | 2 | 2 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 10.4 | 9.4 | 9.4 | 10.4 | 17 | 35.86 | 32.41 | 32.41 | 35.86 | 38.64 | 2 |
| 1SV20EE402 | 12 | 10 | 22 | 10 | 12 | 22 | 12 | 10 | 22 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 17.6 | 15.6 | 15.6 | 17.6 | 24 | 60.69 | 53.79 | 53.79 | 60.69 | 54.55 | 18 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 57.40 | 55.58 | 55.58 | 57.40 | 56.55 | |

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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

3rd 20-21

## DEPARTMENT OF EEE

| SUBJECT | TRANSFORMER &GENERATOR | SUBJECT CODE | 18EE33 |
|---|---|---|---|

**COURSE OUTCOME**

**CO1.** Understand the construction and operation of 1-phase, 3-Phase transformers and Autotransformer.

**CO2.** Analyze the performance of transformers by polarity test, Sumpner's Test, phase conversion, 3-phase connection, and parallel operation.

**CO3.** Understand the construction and working of AC and DC Generators.

**CO4.** Analyze the performance of the AC Generators on infinite bus and parallel operation.

**CO5.** Determine the regulation of AC Generator by Slip test, EMF, MMF, and ZPF Methods

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

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**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | MRS. SWETHA T M | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-21 | | |
| COURSE | B.E | SEMESTER | III | SECTION | |
| SUBJECT | TRANSFORMER & GENERATOR | SUBJECT CODE | 18EE33 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | 3 | 2 | | | 2 | | | | 2 | 1 |
| CO2 | 2 | 3 | 3 | 2 | | | 2 | | | | 2 | 1 |
| CO3 | 1 | 3 | 3 | 1 | | | 2 | | | | 2 | 1 |
| CO4 | 2 | 3 | 3 | 2 | | | 2 | | | | 2 | 1 |
| CO5 | 2 | 3 | 3 | 2 | | | 2 | | | | 2 | 1 |
| AVERAGE | 2 | 3 | 3 | 1.8 | | | 2 | | | | 2 | 1 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.11 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 54.5 | 1.64 | 1.64 | 1.64 | 1.09 | | | 1.09 | | | | 1.09 | 0.55 |
| CO2 | 54.7 | 1.09 | 1.64 | 1.64 | 1.09 | | | 1.09 | | | | 1.09 | 0.55 |
| CO3 | 56.2 | 0.56 | 1.69 | 1.69 | 0.56 | | | 1.12 | | | | 1.12 | 0.56 |
| CO4 | 61.4 | 1.23 | 1.84 | 1.84 | 1.23 | | | 1.23 | | | | 1.23 | 0.61 |
| CO5 | 60.7 | 1.21 | 1.82 | 1.82 | 1.21 | | | 1.21 | | | | 1.21 | 0.61 |
| AVERAGE | 57.5 | 1.1466 | 1.725 | 1.725 | 1.0376 | 0 | 0 | 1.15 | 0 | 0 | 0 | 1.15 | 0.575 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.215 |

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| SEM:III, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE T&G 2020-2021 | | | | | | TOTAL | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 12 | 12 | 24 | 12 | 14 | 26 | 11 | 14 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 22 | 18.4 | 18.4 | 18.4 | 31.4 | 20.4 | 54.1 | 54.1 | 54.1 | 58.1 | 60 |
| 1SV19EE001 | 13 | 12 | 25 | 14 | 13 | 27 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 19.8 | 18.8 | 20.8 | 33.8 | 21.8 | 58.2 | 55.3 | 61.2 | 62.6 | 64.1 |
| 1SV19EE002 | 12 | 13 | 25 | 13 | 14 | 27 | 14 | 9 | 23 | 2 | 2 | 2 | 2 | 2 | 10 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 11 | 16.2 | 17.2 | 17.2 | 32.2 | 13.2 | 47.6 | 50.6 | 50.6 | 59.6 | 38.8 |
| 1SV19EE005 | 12 | 17 | 29 | 10 | 18 | 28 | 11 | 19 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 23.2 | 16.2 | 35.2 | 25.2 | 53.5 | 68.2 | 47.6 | 65.2 | 74.1 |
| 1SV19EE006 | 14 | 9 | 23 | 12 | 13 | 25 | 12 | 15 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 3 | 3 | 3 | 3 | 3 | 15 | 19 | 14 | 17 | 30 | 20 | 55.9 | 41.2 | 50.0 | 55.6 | 58.8 |
| 1SV19EE007 | 12 | 14 | 26 | 14 | 14 | 28 | 14 | 16 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 18.8 | 20.8 | 20.8 | 34.8 | 22.8 | 55.3 | 61.2 | 61.2 | 64.4 | 67.1 |
| 1SV19EE008 | 13 | 12 | 25 | 15 | 9 | 24 | 13 | 16 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 19.2 | 18.2 | 21.2 | 28.2 | 22.2 | 56.5 | 53.5 | 62.4 | 52.2 | 65.3 |
| 1SV19EE009 | 10 | 13 | 23 | 14 | 15 | 29 | 15 | 11 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 17 | 15.4 | 18.4 | 19.4 | 35.4 | 16.4 | 45.3 | 54.1 | 57.1 | 65.6 | 48.2 |
| 1SV19EE011 | 11 | 19 | 30 | 12 | 18 | 30 | 14 | 16 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 17.6 | 25.6 | 18.6 | 38.6 | 22.6 | 51.8 | 75.3 | 54.7 | 71.5 | 66.5 |
| 1SV19EE012 | 12 | 12 | 24 | 14 | 14 | 28 | 15 | 14 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 18.2 | 20.2 | 35.2 | 20.2 | 53.5 | 53.5 | 59.4 | 65.2 | 59.4 |
| 1SV19EE013 | 14 | 16 | 30 | 13 | 15 | 28 | 12 | 17 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 22 | 20.1 | 22.1 | 19.1 | 33.1 | 23.1 | 59.1 | 65.0 | 56.2 | 61.3 | 67.9 |
| 1SV19EE014 | 13 | 11 | 24 | 12 | 14 | 26 | 13 | 12 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 8 | 16.6 | 14.6 | 15.6 | 30.6 | 15.6 | 48.8 | 42.9 | 45.9 | 56.7 | 45.9 |
| 1SV19EE016 | 12 | 5 | 17 | 14 | 9 | 23 | 14 | 12 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 13 | 16.6 | 9.6 | 18.6 | 27.6 | 16.6 | 48.8 | 28.2 | 54.7 | 51.1 | 48.8 |
| 1SV19EE017 | 14 | 8 | 22 | 15 | 11 | 26 | 14 | 13 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 37 | 23.4 | 17.4 | 24.4 | 34.4 | 22.4 | 68.8 | 51.2 | 71.8 | 63.7 | 65.9 |
| 1SV19EE020 | 13 | 17 | 30 | 12 | 18 | 30 | 12 | 18 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 19.2 | 23.2 | 18.2 | 36.2 | 24.2 | 56.5 | 68.2 | 53.5 | 67.0 | 71.2 |
| 1SV20EE400 | 14 | 11 | 25 | 12 | 15 | 27 | 13 | 16 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 20.6 | 17.6 | 18.6 | 34.6 | 22.6 | 60.6 | 51.8 | 54.7 | 64.1 | 66.5 |
| 1SV20EE401 | 11 | 12 | 23 | 14 | 15 | 29 | 11 | 15 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 22 | 17.6 | 18.6 | 20.6 | 32.6 | 21.6 | 51.8 | 54.7 | 60.6 | 60.4 | 63.5 |
| TOTAL | 212 | 213 | 425 | 222 | 239 | 461 | 222 | 248 | 470 | 34 | 34 | 34 | 34 | 34 | 170 | 68.9 | 68.9 | 68.9 | 69 | 68.9 | 345 | 315 | 315.9 | 324.9 | 564 | 351 | 926.2 | 929.1 | 955.6 | 1044.3 | 1032.1 |
| Total students | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| Average | 12.47 | 12.53 | 25 | 13.059 | 14.06 | 27.118 | 13.06 | 14.6 | 27.647 | 2 | 2 | 2 | 2 | 2 | 10 | 4.05 | 4.05 | 4.053 | 4.1 | 4.053 | 20.2941 | 18.5 | 18.58 | 19.112 | 33.2 | 20.6 | 54.5 | 54.7 | 56.2 | 61.4 | 60.7 |

## 18EE33 T&G 2020-2021

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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | ANALOG ELECTRONIC CIRCUITS | SUBJECT CODE | 18EE34 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Obtain the output characteristics of clipper and clamper circuits. |
| CO2 | Design and compare biasing circuits for transistor amplifiers & explain the transistor switching. |
| CO3 | Explain the concept of feedback, its types and design of feedback circuits |
| CO4 | Design and analyze the power amplifier circuits and oscillators for different frequencies. |
| CO5 | Design and analysis of FET and MOSFET amplifiers |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | V.RAJESH KUMAR | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2018-19 | | |
| COURSE | B.E | SEMESTER | III | SECTION | EEE |
| SUBJECT | ANALOG ELECTRONIC CIRCUITS | SUBJECT CODE | 18EE34 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| CO1 | 1 | 1 | 2 | | | | | | | | | |
| CO2 | 1 | 1 | 3 | | | | | | | | | |
| CO3 | 1 | 1 | 2 | | | | | | | | | |
| CO4 | 1 | 1 | 3 | | | | | | | | | |
| CO5 | 1 | 1 | 3 | | | | | | | | | |
| AVERAGE | 1 | 1 | 3 | | | | | | | | | |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 1.6 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 40.29 | 0.41 | 0.41 | 0.81 | | | | | | | | | |
| CO2 | 39.25 | 0.39 | 0.39 | 1.17 | | | | | | | | | |
| CO3 | 40.28 | 0.40 | 0.40 | 0.81 | | | | | | | | | |
| CO4 | 40.28 | 0.40 | 0.40 | 1.21 | | | | | | | | | |
| CO5 | 40.69 | 0.41 | 0.41 | 1.22 | | | | | | | | | |
| AVERAGE | 40.11 | 0.40 | 0.40 | 1.04 | | | | | | | | | |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 0.61 |

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Electrical & Electronics Engineering
Shridevi Institute of Engineering &
TUMKUR-572106.

PRINCIPAL
SIET., TUMAKURU

STAFF NAME: V RAJESH KUMAR

| Academic year | 2018-19 | | | SEM | 3 | | Total strength | | | 18 | | Subject | ANALOG ELECTRONIC CIRCUITS | | | Subject Code | 18EE34 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:3,SEC: E&E | IA TEST 1(30M) | | | | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 6 | 6 | 12 | 6 | 6 | 12 | 6 | 7 | 13 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 11 | 17 | 11 | 11 | 12 | 37.93103 | 38.63636 | 37.93103 | 37.93103 | 41.37931 |
| 1SV19EE001 | 6 | 6 | 12 | 6 | 6 | 12 | 6 | 7 | 13 | 2 | 2 | 2 | 2 | 2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 11.2 | 17.2 | 11.2 | 11.2 | 12.2 | 38.62069 | 39.09091 | 38.62069 | 38.62069 | 42.06897 |
| 1SV19EE002 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 8.6 | 13.6 | 8.6 | 8.6 | 8.6 | 29.65517 | 30.90909 | 29.65517 | 29.65517 | 29.65517 |
| 1SV19EE005 | 6 | 6 | 12 | 6 | 6 | 12 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 14.2 | 20.2 | 14.2 | 14.2 | 14.2 | 48.96552 | 45.90909 | 48.96552 | 48.96552 | 48.96552 |
| 1SV19EE006 | 5 | 5 | 10 | 6 | 5 | 11 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 9.8 | 15.8 | 9.8 | 9.8 | 9.8 | 33.7931 | 35.90909 | 33.7931 | 33.7931 | 33.7931 |
| 1SV19EE007 | 7 | 7 | 14 | 7 | 7 | 14 | 7 | 7 | 14 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 14.8 | 21.8 | 14.8 | 14.8 | 14.8 | 51.03448 | 49.54545 | 51.03448 | 51.03448 | 51.03448 |
| 1SV19EE008 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.7 | 17.2 | 11.7 | 11.7 | 11.7 | 40.34483 | 39.09091 | 40.34483 | 40.34483 | 40.34483 |
| 1SV19EE009 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 12.1 | 17.6 | 12.1 | 12.1 | 12.1 | 41.72414 | 40 | 41.72414 | 41.72414 | 41.72414 |
| 1SV19EE011 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 13.7 | 20.2 | 13.7 | 13.7 | 13.7 | 47.24138 | 45.90909 | 47.24138 | 47.24138 | 47.24138 |
| 1SV19EE012 | 6 | 6 | 12 | 6 | 6 | 12 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 11 | 17 | 11 | 11 | 11 | 37.93103 | 38.63636 | 37.93103 | 37.93103 | 37.93103 |
| 1SV19EE014 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 6.9 | 11.4 | 6.9 | 6.9 | 6.9 | 23.7931 | 25.90909 | 23.7931 | 23.7931 | 23.7931 |
| 1SV19EE016 | 4 | 4 | 8 | 4 | 4 | 8 | 4 | 4 | 8 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 10.6 | 14.6 | 10.6 | 10.6 | 10.6 | 36.55172 | 33.18182 | 36.55172 | 36.55172 | 36.55172 |
| 1SV19EE017 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 15.5 | 22 | 15.5 | 15.5 | 15.5 | 53.44828 | 50 | 53.44828 | 53.44828 | 53.44828 |
| 1SV19EE020 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 13.3 | 18.8 | 13.3 | 13.3 | 13.3 | 45.86207 | 42.72727 | 45.86207 | 45.86207 | 45.86207 |
| 1SV20EE400 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 13 | 18 | 13 | 13 | 13 | 44.82759 | 40.90909 | 44.82759 | 44.82759 | 44.82759 |
| 1SV20EE401 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 12.2 | 17.2 | 12.2 | 12.2 | 12.2 | 42.06897 | 39.09091 | 42.06897 | 42.06897 | 42.06897 |
| 1SV20EE402 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 9 | 14 | 9 | 9 | 9 | 31.03448 | 31.81818 | 31.03448 | 31.03448 | 31.03448 |
| | | | | | | | | | | | | | | | | | | | | 11.68235 | 17.27059 | 11.68235 | 11.68235 | 11.8 | 40.28398 | 39.25134 | 40.28398 | 40.28398 | 40.68966 |

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|---|---|

## DEPARTMENT OF EEE

| SUBJECT | DIGITAL SYSTEM DESIGN | SUBJECT CODE | 18EE35 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Develop simplified switching equation using Karnaugh Maps and Quine McClusky techniques. |
| CO2 | Design Multiplexer, Encoder, Decoder, Adder, Subtractors and Comparator as digital combinational control circuits. |
| CO3 | Design flip flops, counters, shift registers as sequential control circuits. |
| CO4 | Develop Mealy/Moore Models and state diagrams for the given clocked sequential circuits. |
| CO5 | Explain the functioning of Read only and Read/Write Memories, Programmable ROM EPROM and Flash memory |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY |
|---|---|

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PRINCIPAL
SIET TUMKUR

| FACULTY NAME | | RAGHAVENDRA | | | |
|---|---|---|---|---|---|
| BRANCH | | EEE | ACADEMIC YEAR | | 2018-19 |
| COURSE | B.E | SEMESTER | III | SECTION | |
| SUBJECT | DIGITAL SYSTEM DESIGN | | | SUBJECT CODE | 18EE35 |

CO & PO MAPPING

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | - | - | - | - | - | - | - | - | - | 3 |
| CO2 | 2 | 3 | 3 | - | - | - | - | - | - | - | - | 2 |
| CO3 | 2 | 2 | 3 | - | - | - | - | - | - | - | - | 2 |
| CO4 | 2 | 2 | - | - | - | - | - | - | - | - | - | 2 |
| CO5 | - | - | 3 | - | - | - | - | - | - | - | - | 2 |
| AVERAGE | 2.25 | 2.5 | 3 | - | - | - | - | - | - | - | - | 2.2 |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.48 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 36.47 | 0.82 | 0.81 | | | | | | | | | | 0.72 |
| CO2 | 35.56 | 0.79 | 0.88 | 1.06 | | | | | | | | | 0.78 |
| CO3 | 36.47 | 0.82 | 0.81 | 1.09 | | | | | | | | | 0.72 |
| CO4 | 36.47 | 0.82 | 0.81 | | | | | | | | | | 0.72 |
| CO5 | 36.85 | 0.83 | | 1.10 | | | | | | | | | 0.73 |
| AVERAGE | 36.36 | 0.81 | 0.82 | 1.08 | | | | | | | | | 0.73 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 0.86 |

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PRINCIPAL
SIET., TUMAKURU

STAFF NAME: RAGAVENDRA

| Academic year | 2018-19 | | | SEM | 3 | | Total strength | | | 18 | | Subject | | | DIGITAL SYSTEM DESIGN | | | | Subject Code | 18EE35 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:3,SEC: E&E | IA TEST 1(30M) | | | IA TEST 2(30) | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 4.8 | 4.8 | 9.6 | 4.8 | 4.8 | 9.6 | 4.8 | 4.8 | 9.6 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 9.8 | 14.6 | 9.8 | 9.8 | 9.8 | 33.7931 | 33.18182 | 33.7931 | 33.7931 | 33.7931 |
| 1SV19EE001 | 6 | 6 | 12 | 6 | 6 | 12 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 9.2 | 15.2 | 9.2 | 9.2 | 9.2 | 31.72414 | 34.54545 | 31.72414 | 31.72414 | 31.72414 |
| 1SV19EE002 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 9.7 | 15.2 | 9.7 | 9.7 | 9.7 | 33.44828 | 34.54545 | 33.44828 | 33.44828 | 33.44828 |
| 1SV19EE005 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 13.3 | 18.6 | 13.3 | 13.3 | 13.3 | 45.86207 | 42.27273 | 45.86207 | 45.86207 | 45.86207 |
| 1SV19EE006 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 4.6 | 5 | 9.6 | 2 | 2 | 2 | 2 | 2 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 8.4 | 13 | 8.4 | 8.4 | 8.8 | 28.96552 | 29.54545 | 28.96552 | 28.96552 | 30.34483 |
| 1SV19EE007 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 12.6 | 18.4 | 12.6 | 12.6 | 12.6 | 43.44828 | 41.81818 | 43.44828 | 43.44828 | 43.44828 |
| 1SV19EE008 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 9.1 | 13.4 | 9.1 | 9.1 | 9.1 | 31.37931 | 30.45455 | 31.37931 | 31.37931 | 31.37931 |
| 1SV19EE009 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.2 | 16.2 | 11.2 | 11.2 | 11.2 | 38.62069 | 36.81818 | 38.62069 | 38.62069 | 38.62069 |
| 1SV19EE011 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 13.6 | 19.4 | 13.6 | 13.6 | 13.6 | 46.89655 | 44.09091 | 46.89655 | 46.89655 | 46.89655 |
| 1SV19EE012 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 4.5 | 6 | 10.5 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 9.3 | 13.8 | 9.3 | 9.3 | 10.8 | 32.06897 | 31.36364 | 32.06897 | 32.06897 | 37.24138 |
| 1SV19EE014 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 6.5 | 11 | 6.5 | 6.5 | 6.5 | 22.41379 | 25 | 22.41379 | 22.41379 | 22.41379 |
| 1SV19EE016 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 8.5 | 12.8 | 8.5 | 8.5 | 8.5 | 29.31034 | 29.09091 | 29.31034 | 29.31034 | 29.31034 |
| 1SV19EE017 | 6.2 | 6.2 | 12.4 | 6.2 | 6.2 | 12.4 | 6.2 | 6.2 | 12.4 | 2 | 2 | 2 | 2 | 2 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 15.8 | 22 | 15.8 | 15.8 | 15.8 | 54.48276 | 50 | 54.48276 | 54.48276 | 54.48276 |
| 1SV19EE020 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 12.8 | 17.8 | 12.8 | 12.8 | 12.8 | 44.13793 | 40.45455 | 44.13793 | 44.13793 | 44.13793 |
| 1SV20EE400 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 10.7 | 15.2 | 10.7 | 10.7 | 10.7 | 36.89655 | 34.54545 | 36.89655 | 36.89655 | 36.89655 |
| 1SV20EE401 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 8.8 | 13.4 | 8.8 | 8.8 | 8.8 | 30.34483 | 30.45455 | 30.34483 | 30.34483 | 30.34483 |
| 1SV20EE402 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 10.5 | 16 | 10.5 | 10.5 | 10.5 | 36.2069 | 36.36364 | 36.2069 | 36.2069 | 36.2069 |
| | | | | | | | | | | | | | | | | | | | | 10.57647 | 15.64706 | 10.57647 | 10.57647 | 10.68824 | 36.47059 | 35.5615 | 36.47059 | 36.47059 | 36.85598 |

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# DEPARTMENT OF EEE

| SUBJECT | Electrical & Electronic Measurement | SUBJECT CODE | 18EE36 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Measure resistance, inductance and capacitance using bridges and determine earth resistance. |
| CO2 | Explain the working of various meters used for measurement of Power, Energy & understand the adjustments, calibration & errors in energy meters. |
| CO3 | Understand methods of extending the range of instruments & instrument transformers. |
| CO4 | Explain the working of different electronic instruments. |
| CO5 | Explain the working of different display and recording devices. |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | UMABAI | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-2021 | | | | | |
| COURSE | B.E | SEMESTER | III | SECTION | | | | | | | | |
| SUBJECT | Electrical & Electronic Measurement | | | | | SUBJECT CODE | 18EE36 | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 1 |
| CO2 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 1 |
| CO3 | 3 | 2 | 3 | 2 | 2 | 2 | | | | | | 1 |
| CO4 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 1 |
| CO5 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 2 |
| AVERAGE | 3 | 2 | 2.2 | 2 | 2 | 2 | | | | | | 1.2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.05 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 18.52 | 1.44 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | | | | | | 0.48 |
| CO2 | 18.58 | 1.45 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | | | | | | 0.48 |
| CO3 | 19.11 | 1.52 | 1.01 | 1.52 | 1.01 | 1.01 | 1.01 | | | | | | 0.50 |
| CO4 | 33.17 | 1.40 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | | | | | | 0.46 |
| CO5 | 20.64 | 1.43 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | | | | | | 0.47 |
| AVERAGE | 21.56 | 1.44 | 0.96 | 1.06 | 0.96 | 0.96 | 0.96 | | | | | | 0.47 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.28 |

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| SEM:III, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE T&G 2020-2021 | | | | | | TOTAL | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 12 | 12 | 24 | 12 | 14 | 26 | 11 | 14 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 22 | 18.4 | 18.4 | 18.4 | 31.4 | 20.4 |
| 1SV19EE001 | 13 | 12 | 25 | 14 | 13 | 27 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 19.8 | 18.8 | 20.8 | 33.8 | 21.8 |
| 1SV19EE002 | 12 | 13 | 25 | 13 | 14 | 27 | 14 | 9 | 23 | 2 | 2 | 2 | 2 | 2 | 10 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 11 | 16.2 | 17.2 | 17.2 | 32.2 | 13.2 |
| 1SV19EE005 | 12 | 17 | 29 | 10 | 18 | 28 | 11 | 19 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 23.2 | 16.2 | 35.2 | 25.2 |
| 1SV19EE006 | 14 | 9 | 23 | 12 | 13 | 25 | 12 | 15 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 3 | 3 | 3 | 3 | 3 | 15 | 19 | 14 | 17 | 30 | 20 |
| 1SV19EE007 | 12 | 14 | 26 | 14 | 14 | 28 | 14 | 16 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 18.8 | 20.8 | 20.8 | 34.8 | 22.8 |
| 1SV19EE008 | 13 | 12 | 25 | 15 | 9 | 24 | 13 | 16 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 19.2 | 18.2 | 21.2 | 28.2 | 22.2 |
| 1SV19EE009 | 10 | 13 | 23 | 14 | 15 | 29 | 15 | 11 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 17 | 15.4 | 18.4 | 19.4 | 35.4 | 16.4 |
| 1SV19EE011 | 11 | 19 | 30 | 12 | 18 | 30 | 14 | 16 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 17.6 | 25.6 | 18.6 | 38.6 | 22.6 |
| 1SV19EE012 | 12 | 12 | 24 | 14 | 14 | 28 | 15 | 14 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 18.2 | 20.2 | 35.2 | 20.2 |
| 1SV19EE013 | 14 | 16 | 30 | 13 | 15 | 28 | 12 | 17 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.1 | 4.1 | 4.1 | 4.1 | 4.1 | 22 | 20.1 | 22.1 | 19.1 | 33.1 | 23.1 |
| 1SV19EE014 | 13 | 11 | 24 | 12 | 14 | 26 | 13 | 12 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 8 | 16.6 | 14.6 | 15.6 | 30.6 | 15.6 |
| 1SV19EE016 | 12 | 5 | 17 | 14 | 9 | 23 | 14 | 12 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 13 | 16.6 | 9.6 | 18.6 | 27.6 | 16.6 |
| 1SV19EE017 | 14 | 8 | 22 | 15 | 11 | 26 | 14 | 13 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 37 | 23.4 | 17.4 | 24.4 | 34.4 | 22.4 |
| 1SV19EE020 | 13 | 17 | 30 | 12 | 18 | 30 | 12 | 18 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 19.2 | 23.2 | 18.2 | 36.2 | 24.2 |
| 1SV20EE400 | 14 | 11 | 25 | 12 | 15 | 27 | 13 | 16 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 20.6 | 17.6 | 18.6 | 34.6 | 22.6 |
| 1SV20EE401 | 11 | 12 | 23 | 14 | 15 | 29 | 11 | 15 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 22 | 17.6 | 18.6 | 20.6 | 32.6 | 21.6 |
| TOTAL | 212 | 213 | 425 | 222 | 239 | 461 | 222 | 248 | 470 | 34 | 34 | 34 | 34 | 34 | 170 | 68.9 | 68.9 | 68.9 | 68.9 | 68.9 | 345 | 314.9 | 315.9 | 324.9 | 563.9 | 350.9 |
| Total students | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 | 17 |
| Average | 12.471 | 12.529 | 25 | 13.059 | 14.059 | 27.118 | 13.0588 | 14.5882 | 27.647 | 2 | 2 | 2 | 2 | 2 | 10 | 4.05 | 4.05 | 4.05 | 4.05 | 4.05 | 20.29 | 18.52 | 18.58 | 19.11 | 33.17 | 20.64 |

# ELECTRICAL & ELECTRONICS MEASUREMENTS
# 18EE36
# 2020-21

PRINCIPAL
SIET., TUMAKURU

Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering & Technology
TUMKUR-572106.

# DEPARTMENT OF EEE

| SUBJECT | MICROCONTROLLER | SUBJECT CODE | 18EE52 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Outline the 8051 architecture, registers, internal memory organization, addressing modes |
| CO2 | Discuss 8051 addressing modes, instruction set of 8051, accessing data and I/O port programming |
| CO3 | Develop 8051C programs for time delay, I/O operations, I/O bit manipulation, logic and arithmetic operations, data conversion and timer/counter programming. |
| CO4 | Summarize the basics of serial communication and interrupts, also develop 8051 programs serial data communication and interrupt programming |
| CO5 | Program 8051 to work with external devices for ADC, DAC |
| | Stepper motor control, DC motor control, Elevator control |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

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TUMKUR-572106.

PRINCIPAL
SIET TUMKUR

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | V RAJESH KUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | V | SECTION | EEE | | | | | | | |
| SUBJECT | MICROCONTROLLER | | | | | SUBJECT CODE | 18EE52 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | - | - | - | - | - | - | - | - | - | - | 2 |
| CO2 | 2 | 2 | - | - | 2 | - | - | - | - | - | - | 2 |
| CO3 | 3 | 2 | - | - | 2 | - | - | - | - | - | - | 2 |
| CO4 | 3 | 2 | - | - | - | - | - | - | - | - | - | 2 |
| CO5 | 3 | 3 | - | - | - | - | - | - | - | - | - | 2 |
| AVERAGE | 2.6 | 1.8 | | | 2 | | | | | | | 2 |

**CO AND PO ATTAINMENT**

Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering & Technology
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| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 42.64 | 0.85 | | | | | | | | | | | 0.85 |
| CO2 | 42.10 | 0.84 | 0.84 | | | 0.84 | | | | | | | 0.84 |
| CO3 | 45.60 | 1.36 | 0.91 | | | 0.91 | | | | | | | 0.91 |
| CO4 | 45.60 | 1.36 | 0.91 | | | | | | | | | | 0.91 |
| CO5 | 45.60 | 1.36 | 1.18 | | | | | | | | | | 0.91 |
| AVERAGE | 44.30 | 1.48 | 1.48 | | | 0.91 | | | | | | | 0.88 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.18 |

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Electrical & Electronics Engineering
Shridevi Institute of Engineering & Technology
TUMKUR-572106.

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SIET., TUMAKURU

V.RAJESH KUMAR

| Academic yea | 2020-21 | | | SEM | 5 | | Total strength | | | 19 | | Subject | MICROCONTROLLER | | | | Subject Code | 18EE52 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM-5,SEC: E&E | IA TEST 1(30M) | | | | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 7 | 8.2 | 8.2 | 8.2 | 8.2 | 14.5 | 21.2 | 15.7 | 15.7 | 15.7 | 50 | 48.18182 | 54.13793 | 54.13793 | 54.13793 |
| 1SV19EE001 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 4.8 | 6.6 | 6.6 | 6.6 | 6.6 | 12.4 | 19.8 | 14.2 | 14.2 | 14.2 | 42.75862 | 45 | 48.96552 | 48.96552 | 48.96552 |
| 1SV19EE002 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 1.8 | 8.6 | 8.6 | 8.6 | 8.6 | 9.1 | 21.2 | 15.9 | 15.9 | 15.9 | 31.37931 | 48.18182 | 54.82759 | 54.82759 | 54.82759 |
| 1SV19EE005 | 5.6 | 5.3 | 10.9 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 6.4 | 8 | 8 | 8 | 8 | 14 | 20.6 | 15.3 | 15.3 | 15.3 | 48.27586 | 46.81818 | 52.75862 | 52.75862 | 52.75862 |
| 1SV19EE006 | 5.1 | 5.1 | 10.2 | 4.2 | 4.2 | 8.4 | 4.2 | 4.2 | 8.4 | 2 | 2 | 2 | 2 | 2 | 4.4 | 5 | 5 | 5 | 5 | 11.5 | 16.3 | 11.2 | 11.2 | 11.2 | 39.65517 | 37.04545 | 38.62069 | 38.62069 | 38.62069 |
| 1SV19EE007 | 5.6 | 6 | 11.6 | 6 | 6 | 12 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 7.2 | 6.2 | 6.2 | 6.2 | 6.2 | 14.8 | 20.2 | 14.2 | 14.2 | 14.2 | 51.03448 | 45.90909 | 48.96552 | 48.96552 | 48.96552 |
| 1SV19EE008 | 5.5 | 5.5 | 11 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 4.4 | 6.4 | 6.4 | 6.4 | 6.4 | 11.9 | 18.4 | 12.9 | 12.9 | 12.9 | 41.03448 | 41.81818 | 44.48276 | 44.48276 | 44.48276 |
| 1SV19EE009 | 5.6 | 4.3 | 9.9 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 2 | 2 | 2 | 2 | 2 | 3.2 | 4.8 | 4.8 | 4.8 | 4.8 | 10.8 | 15.4 | 11.1 | 11.1 | 11.1 | 37.24138 | 35 | 38.27586 | 38.27586 | 38.27586 |
| 1SV19EE011 | 6 | 6.5 | 12.5 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 4.8 | 9.7 | 9.7 | 9.7 | 9.7 | 12.8 | 24.7 | 18.2 | 18.2 | 18.2 | 44.13793 | 56.13636 | 62.75862 | 62.75862 | 62.75862 |
| 1SV19EE012 | 5.1 | 5 | 10.1 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 3.4 | 7.6 | 7.6 | 7.6 | 7.6 | 10.5 | 19.6 | 14.6 | 14.6 | 14.6 | 36.2069 | 44.54545 | 50.34483 | 50.34483 | 50.34483 |
| 1SV19EE013 | 5.5 | 5.5 | 11 | 3.8 | 3.8 | 7.6 | 3.8 | 3.8 | 7.6 | 2 | 2 | 2 | 2 | 2 | 2.6 | 0 | 0 | 0 | 0 | 10.1 | 11.3 | 5.8 | 5.8 | 5.8 | 34.82759 | 25.68182 | 20 | 20 | 20 |
| 1SV19EE014 | 5 | 5 | 10 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 0.8 | 0 | 0 | 0 | 0 | 7.8 | 11.5 | 6.5 | 6.5 | 6.5 | 26.89655 | 26.13636 | 22.41379 | 22.41379 | 22.41379 |
| 1SV19EE016 | 5.3 | 3.8 | 9.1 | 3.8 | 3.8 | 7.6 | 3.8 | 3.8 | 7.6 | 2 | 2 | 2 | 2 | 2 | 4.2 | 5 | 5 | 5 | 5 | 11.5 | 14.6 | 10.8 | 10.8 | 10.8 | 39.65517 | 33.18182 | 37.24138 | 37.24138 | 37.24138 |
| 1SV19EE017 | 6 | 6 | 12 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 7 | 8.6 | 8.6 | 8.6 | 8.6 | 15 | 23.1 | 17.1 | 17.1 | 17.1 | 51.72414 | 52.5 | 58.96552 | 58.96552 | 58.96552 |
| 1SV19EE020 | 5.8 | 5.8 | 11.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 9 | 9 | 9 | 9 | 9 | 16.8 | 22.1 | 16.3 | 16.3 | 16.3 | 57.93103 | 50.22727 | 56.2069 | 56.2069 | 56.2069 |
| 1SV20EE400 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 13 | 18 | 13 | 13 | 13 | 44.82759 | 40.90909 | 44.82759 | 44.82759 | 44.82759 |
| 1SV20EE401 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 14.3 | 19.6 | 14.3 | 14.3 | 14.3 | 49.31034 | 44.54545 | 49.31034 | 49.31034 | 49.31034 |
| 1SV20EE402 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 9.6 | 14.2 | 9.6 | 9.6 | 9.6 | 33.10345 | 32.27273 | 33.10345 | 33.10345 | 33.10345 |
| 1SV20EE404 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 14.6 | 20.2 | 14.6 | 14.6 | 14.6 | 50.34483 | 45.90909 | 50.34483 | 50.34483 | 50.34483 |
| | | | | | | | | | | | | | | | | | | | | 12.36842 | 18.52632 | 13.22632 | 13.22632 | 13.22632 | 42.64973 | 42.10526 | 45.60799 | 45.60799 | 45.60799 |

PRINCIPAL
SIET., TUMAKURU

G. H R
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TUMKUR-572106.

# DEPARTMENT OF EEE

| SUBJECT | POWER ELECTRONICS | SUBJECT CODE | 18EE53 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | To give an overview of applications power electronics, different types of power semiconductor devices, their switching characteristics |
| CO2 | To explain power diode characteristics, types, their operation and the effects of power diodes on RL circuits |
| CO3 | To explain the techniques for design and analysis of single phase diode rectifier circuits |
| CO4 | To explain different power transistors, their steady state and switching characteristics and imitations. |
| CO5 | To explain different types of Thyristors, their gate characteristics and gate control requirements. |
| | To explain the design, analysis techniques, performance parameters and characteristics of controlled rectifiers, DC- DC, DC –AC converters and Voltage controllers. |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms

G. H R

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of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | G H RAVI KUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | V | SECTION | EEE | | | | | | | |
| SUBJECT | POWER ELECTROINCS | | | | | SUBJECT CODE | 18EE71 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | - | - | - | - | - | - | - | - | - | - | 2 |
| CO2 | 2 | - | - | - | - | - | - | - | - | - | - | 2 |
| CO3 | 2 | 2 | - | - | - | - | - | - | - | - | - | 2 |
| CO4 | 2 | 2 | - | - | - | - | - | - | - | - | - | - |
| CO5 | 2 | 2 | - | - | - | - | - | - | - | - | - | - |
| AVERAGE | 2 | 2 | | | | | | | | | | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2 |

G. H Ravi

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## CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 38.43 | 0.76 | | | | | | | | | | | 0.76 |
| CO2 | 25.33 | 0.83 | | | | | | | | | | | 0.76 |
| CO3 | 38.43 | 0.76 | 0.76 | | | | | | | | | | 0.76 |
| CO4 | 38.43 | 0.76 | 0.76 | | | | | | | | | | |
| CO5 | 38.43 | 0.76 | 0.76 | | | | | | | | | | |
| AVERAGE | 35.81 | 0.77 | 0.76 | | | | | | | | | | 0.76 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 0.76 |

G.H Rao
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TUMKUR-572106.

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| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Academic yea | 2020-21 | | | SEM | 5 | | Total strength | | | 19 | | Subject | | | | | RAVIKUMAR G H | | | | | | | | | | | | | |
| SEM:5,SEC: E&E | IA TEST 1(30M) | | | | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 4.8 | 4.8 | 9.6 | 4.8 | 4.8 | 9.6 | 4.8 | 4.8 | 9.6 | 2 | 2 | 2 | 2 | 2 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 12.4 | 12.4 | 12.4 | 12.4 | 12.4 | 42.75862 | 28.18182 | 42.75862 | 42.75862 | 42.75862 |
| 1SV19EE001 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 32.41379 | 21.36364 | 32.41379 | 32.41379 | 32.41379 |
| 1SV19EE002 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | 36.89655 | 24.31818 | 36.89655 | 36.89655 | 36.89655 |
| 1SV19EE005 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.8 | 11.8 | 11.8 | 11.8 | 11.8 | 40.68966 | 26.81818 | 40.68966 | 40.68966 | 40.68966 |
| 1SV19EE006 | 4.1 | 4.1 | 10.2 | 4.1 | 4.1 | 8.2 | 4.1 | 4.1 | 8.2 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 10.9 | 10.9 | 10.9 | 10.9 | 10.9 | 37.58621 | 24.77273 | 37.58621 | 37.58621 | 37.58621 |
| 1SV19EE007 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 40.34483 | 26.59091 | 40.34483 | 40.34483 | 40.34483 |
| 1SV19EE008 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 10.7 | 10.7 | 10.7 | 10.7 | 10.7 | 36.89655 | 24.31818 | 36.89655 | 36.89655 | 36.89655 |
| 1SV19EE009 | 4.8 | 4.8 | 9.6 | 4.8 | 4.8 | 9.6 | 4.8 | 4.8 | 9.6 | 2 | 2 | 2 | 2 | 2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 8 | 8 | 8 | 8 | 8 | 27.58621 | 18.18182 | 27.58621 | 27.58621 | 27.58621 |
| 1SV19EE011 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 14.9 | 14.9 | 14.9 | 14.9 | 14.9 | 51.37931 | 33.86364 | 51.37931 | 51.37931 | 51.37931 |
| 1SV19EE012 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 9.2 | 9.2 | 9.2 | 9.2 | 9.2 | 31.72414 | 20.90909 | 31.72414 | 31.72414 | 31.72414 |
| 1SV19EE013 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 9.9 | 9.9 | 9.9 | 9.9 | 9.9 | 34.13793 | 22.5 | 34.13793 | 34.13793 | 34.13793 |
| 1SV19EE014 | 3.6 | 3.6 | 7.2 | 3.6 | 3.6 | 7.2 | 3.6 | 3.6 | 7.2 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 26.89655 | 17.72727 | 26.89655 | 26.89655 | 26.89655 |
| 1SV19EE016 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 36.2069 | 23.86364 | 36.2069 | 36.2069 | 36.2069 |
| 1SV19EE017 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 15.7 | 15.7 | 15.7 | 15.7 | 15.7 | 54.13793 | 35.68182 | 54.13793 | 54.13793 | 54.13793 |
| 1SV19EE020 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 40.34483 | 26.59091 | 40.34483 | 40.34483 | 40.34483 |
| 1SV20EE400 | 6 | 6 | 12 | 6 | 6 | 12 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 42.06897 | 27.72727 | 42.06897 | 42.06897 | 42.06897 |
| 1SV20EE401 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 12.2 | 12.2 | 12.2 | 12.2 | 12.2 | 42.06897 | 27.72727 | 42.06897 | 42.06897 | 42.06897 |
| 1SV20EE402 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 10.4 | 10.4 | 10.4 | 10.4 | 10.4 | 35.86207 | 23.63636 | 35.86207 | 35.86207 | 35.86207 |
| 1SV20EE404 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 4.3 | 4.3 | 8.6 | 2 | 2 | 2 | 2 | 2 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 11.7 | 11.7 | 11.7 | 11.7 | 11.7 | 40.34483 | 26.59091 | 40.34483 | 40.34483 | 40.34483 |
| | | | | | | | | | | | | | | | | | | | | 11.14737 | 11.14737 | 11.14737 | 11.14737 | 11.14737 | 38.4392 | 25.33493 | 38.4392 | 38.4392 | 38.4392 |

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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | ELECTRICAL MACHINE DESIGN | SUBJECT CODE | 18EE55 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Identify and list, limitations, modern trends in design, manufacturing of electrical machines and properties of materials used in the electrical machines. |
| **CO2** | Derive the output equation of DC machine, discuss selection of specific loadings and magnetic circuits of DC machines, design the field windings of DC machine, and design stator and rotor circuits of a DC machine |
| **CO3** | Derive the output equations of transformer, discuss selection of specific loadings, estimate the number of cooling tubes, no load current and leakage reactance of core type transformer |
| **CO4** | Develop the output equation of induction motor, discuss selection of specific loadings and magnetic circuits of induction motor, design stator and rotor circuits of a induction motor. |
| **CO5** | Formulate the output equation of alternator, design the field windings of Synchronous machine, discuss short circuit ratio and its effects on performance of synchronous machines, design salient pole and non-salient pole alternators for given specifications |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | TANUJA K S | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-21 | | |
| COURSE | B.E | SEMESTER | V | SECTION | EEE |
| SUBJECT | ELECTRICAL MACHINE DESIGN | | | SUBJECT CODE | 18EE55 |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| CO1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO2 | 2 | 3 | 3 | - | - | - | - | - | - | - | - | - |
| CO3 | 2 | 3 | 3 | - | - | - | - | - | - | - | - | - |
| CO4 | 2 | 3 | 3 | - | - | - | - | - | - | - | - | - |
| CO5 | 2 | 3 | 3 | - | - | - | - | - | - | - | - | - |
| AVERAGE | 2 | 3 | 3 | - | - | - | - | - | - | - | - | - |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.66 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 94.17 | 1.88 | 2.82 | | | | | | | | | | |
| CO2 | 35.36 | 0.70 | 1.10 | 1.10 | | | | | | | | | |
| CO3 | 51.93 | 1.03 | 1.55 | 1.55 | | | | | | | | | |
| CO4 | 61.58 | 1.23 | 1.84 | 1.84 | | | | | | | | | |
| CO5 | 61.58 | 1.23 | 1.84 | 1.84 | | | | | | | | | |
| AVERAGE | 60.92 | 1.21 | 1.83 | 1.58 | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.54 |

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| Academic year | 2020-21 | | SEM | 5 | | Total strength | | | 19 | | Subject | | | ELECTRICAL MACHINE DESIGN | | | | | Subject Code | 18EE55 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:7,SEC: B&F | IA TEST 1(30M) | | IA TEST 2(30M) | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SW18EE001 | 18 | 18 | 3 | 2 | 5 | 6 | 7 | 13 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 25.2 | 10.2 | 9.2 | 13.2 | 14.2 | 86.89655 | 23.18182 | 31.72414 | 45.51724 | 48.96552 |
| 1SW19EE001 | 0 | 0 | 10 | 10 | 20 | 14 | 14 | 28 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 6.2 | 16.2 | 16.2 | 20.2 | 20.2 | 21.37931 | 36.81818 | 55.86207 | 69.65517 | 69.65517 |
| 1SW19EE002 | 18 | 18 | 6 | 5 | 11 | 4 | 4 | 8 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 25.8 | 13.8 | 12.8 | 11.8 | 11.8 | 88.96552 | 31.36364 | 44.13793 | 40.68966 | 40.68966 |
| 1SW19EE005 | 15 | 15 | 3 | 3 | 6 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 22.8 | 10.8 | 10.8 | 14.8 | 15.8 | 78.62069 | 24.54545 | 37.24138 | 51.03448 | 54.48276 |
| 1SW19EE006 | 5 | 5 | 5 | 5 | 10 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 13.6 | 13.6 | 13.6 | 15.6 | 16.6 | 46.89655 | 30.90909 | 46.89655 | 53.7931 | 57.24138 |
| 1SW19EE007 | 30 | 30 | 8 | 8 | 16 | 13 | 13 | 26 | 2 | 2 | 2 | 2 | 2 | 5.2 | 5.2 | 5.2 | 5.2 | 10 | 37.2 | 15.2 | 15.2 | 20.2 | 25 | 128.2759 | 34.54545 | 52.41379 | 69.65517 | 86.2069 |
| 1SW19EE008 | 15 | 15 | 4 | 4 | 8 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 24.2 | 13.2 | 13.2 | 16.2 | 17.2 | 83.44828 | 30 | 45.51724 | 55.86207 | 59.31034 |
| 1SW19EE009 | 18 | 18 | 7 | 8 | 15 | 5 | 4 | 9 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 22 | 11 | 12 | 9 | 8 | 75.86207 | 25 | 41.37931 | 31.03448 | 27.58621 |
| 1SW19EE011 | 24 | 24 | 14 | 14 | 28 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 31.8 | 21.8 | 21.8 | 21.8 | 22.8 | 109.6552 | 49.54545 | 75.17241 | 75.17241 | 78.62069 |
| 1SW19EE012 | 21 | 21 | 7 | 8 | 15 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 29.4 | 15.4 | 16.4 | 15.4 | 16.4 | 101.3793 | 35 | 56.55172 | 53.10345 | 56.55172 |
| 1SW19EE013 | 19 | 19 | 5 | 5 | 10 | 6 | 6 | 12 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 26 | 12 | 12 | 13 | 13 | 89.65517 | 27.27273 | 41.37931 | 44.82759 | 44.82759 |
| 1SW19EE014 | 20 | 20 | 3 | 4 | 7 | 1 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 22 | 5 | 6 | 3 | 4 | 75.86207 | 11.36364 | 20.68966 | 10.34483 | 13.7931 |
| 1SW19EE016 | 15 | 15 | 6 | 6 | 12 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 22.4 | 13.4 | 13.4 | 14.4 | 15.4 | 77.24138 | 30.45455 | 46.2069 | 49.65517 | 53.10345 |
| 1SW19EE017 | 30 | 30 | 13 | 12 | 25 | 11 | 12 | 23 | 2 | 2 | 2 | 2 | 2 | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 | 40.4 | 23.4 | 22.4 | 21.4 | 22.4 | 139.3103 | 53.18182 | 77.24138 | 73.7931 | 77.24138 |
| 1SW19EE020 | 20 | 20 | 6 | 6 | 12 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 8.2 | 8.2 | 8.2 | 8.2 | 8.2 | 30.2 | 16.2 | 16.2 | 17.2 | 18.2 | 104.1379 | 36.81818 | 55.86207 | 59.31034 | 62.75862 |
| 1SW20EE400 | 22 | 22 | 7 | 7 | 14 | 8 | 9 | 17 | 2 | 2 | 2 | 2 | 2 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 30.4 | 15.4 | 15.4 | 16.4 | 17.4 | 104.8276 | 35 | 53.10345 | 56.55172 | 60 |
| 1SW20EE401 | 20 | 20 | 7 | 8 | 15 | 1 | 0 | 1 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 26.8 | 13.8 | 14.8 | 7.8 | 6.8 | 92.41379 | 31.36364 | 51.03448 | 26.89655 | 23.44828 |
| 1SW20EE402 | 0 | 0 | 10 | 9 | 19 | 13 | 14 | 27 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 6.2 | 16.2 | 15.2 | 19.2 | 20.2 | 21.37931 | 36.81818 | 52.41379 | 66.2069 | 69.65517 |
| 1SW20EE404 | 0 | 0 | 7 | 8 | 15 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 8.6 | 15.6 | 16.6 | 15.6 | 16.6 | 29.65517 | 35.45455 | 57.24138 | 53.7931 | 57.24138 |
| | | | | | | | | | | | | | | | | | | | 23.74737 | 14.32632 | 14.37895 | 15.06316 | 15.89474 | 81.88748 | 32.55981 | 49.58758 | 51.94192 | 54.80944 |

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Head of the Department
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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF EEE

5 20-21

| SUBJECT | High Voltage Engineering | SUBJECT CODE | 18EE56 |
|---|---|---|---|

**COURSE OUTCOME**

**CO1.** Explain conduction and breakdown phenomenon in gases, liquid dielectrics and breakdown Phenomenon in solid dielectrics.

**CO2.** Summarize generation of high voltages and currents

**CO3.** Outline measurement techniques for high voltages and currents

**CO4.** Summarize overvoltage phenomenon and insulation coordination in electric power systems.

**CO5.** Explain non-destructive testing of materials and electric apparatus, high-voltage testing of electric apparatus

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | MRS. SHWETHA T M | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-21 | | |
| COURSE | B.E | SEMESTER | V | SECTION | |
| SUBJECT | High Voltage Engineering | SUBJECT CODE | 18EE56 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 2 | 3 | 2 | 2 | 1 | | | | | | 2 | 1 |
| CO2 | 2 | 2 | 3 | 1 | 2 | | | | | | 2 | 1 |
| CO3 | 2 | 3 | 3 | 2 | 1 | | | | | | 2 | 1 |
| CO4 | 2 | 2 | 2 | 2 | 2 | | | | | | 2 | 1 |
| CO5 | 2 | 3 | 3 | 1 | 1 | | | | | | 2 | 1 |
| AVERAGE | 2 | 2.6 | 2.6 | 1.6 | 1.4 | | | | | | 2 | 1 |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 1.88 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 58.01 | 1.2 | 1.7 | 1.2 | 1.2 | 0.6 | | | | | | 1.2 | 0.6 |
| CO2 | 42.16 | 0.8 | 0.8 | 1.3 | 0.4 | 0.8 | | | | | | 0.8 | 0.4 |
| CO3 | 58.50 | 1.2 | 1.8 | 1.8 | 1.2 | 0.6 | | | | | | 1.2 | 0.6 |
| CO4 | 55.97 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | | | | | | 1.1 | 0.6 |
| CO5 | 54.08 | 1.1 | 1.6 | 1.6 | 0.5 | 0.5 | | | | | | 1.1 | 0.5 |
| AVERAGE | 53.74 | 1.075 | 1.416 | 1.384 | 0.882 | 0.734 | | | | | | 1.075 | 0.537 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.014 |

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| SEM: VII, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE-HV 2020-2021 | | | | | | TOTAL | | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1sv17EE002 | 14 | 7 | 21 | 12 | 14 | 26 | 11 | 14 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 23.2 | 16.2 | 21.2 | 34.2 | 23.2 | 68.2 | 47.6 | 62.4 | 68.4 | 63.2 |
| 1sv17EE004 | 15 | 18 | 33 | 14 | 14 | 28 | 12 | 14 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 31 | 23.2 | 26.2 | 22.2 | 34.2 | 22.2 | 68.2 | 77.1 | 65.3 | 63.3 | 65.3 |
| 1sv17EE005 | 12 | 21 | 33 | 11 | 15 | 26 | 13 | 15 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 19.2 | 28.2 | 18.2 | 35.2 | 22.2 | 56.5 | 82.9 | 53.5 | 65.2 | 65.3 |
| 1sv17EE009 | 11 | 20 | 31 | 10 | 17 | 27 | 9 | 17 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 8.4 | 8.4 | 8.4 | 8.4 | 8.4 | 42 | 21.4 | 30.4 | 20.4 | 36.4 | 27.4 | 62.9 | 89.4 | 60.0 | 67.4 | 80.6 |
| 1sv17EE010 | 13 | 9 | 22 | 9 | 14 | 23 | 8 | 16 | 24 | 2 | 2 | 2 | 2 | 2 | 10 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 20.6 | 16.6 | 16.6 | 29.6 | 23.6 | 60.6 | 48.8 | 48.8 | 54.8 | 69.4 |
| 1sv18EE400 | 9 | 12 | 21 | 7 | 18 | 25 | 10 | 16 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 47 | 20.4 | 23.4 | 18.4 | 39.4 | 27.4 | 60.0 | 68.8 | 54.1 | 73.0 | 80.6 |
| 1sv18EE402 | 7 | 15 | 22 | 12 | 12 | 24 | 11 | 12 | 23 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 14.8 | 22.8 | 19.8 | 30.8 | 19.8 | 43.5 | 67.1 | 58.2 | 57.0 | 58.2 |
| 1sv18EE403 | 8 | 17 | 25 | 11 | 16 | 27 | 10 | 16 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 33 | 16.6 | 25.6 | 19.6 | 34.6 | 24.6 | 48.8 | 75.3 | 57.6 | 84.1 | 72.4 |
| TOTAL | 89 | 119 | 208 | 86 | 120 | 206 | 84 | 120 | 204 | 16 | 16 | 16 | 16 | 16 | 80 | 54.4 | 54.4 | 54.4 | 54.4 | 54.4 | 272 | 159.4 | 189.4 | 156.4 | 274.4 | 190.4 | 468.8 | 557.1 | 460.0 | 508.1 | 560.0 |
| Total students | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Average | 11.125 | 14.875 | 26 | 10.75 | 15 | 25.75 | 10.5 | 15 | 25.5 | 2 | 2 | 2 | 2 | 2 | 10 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 34 | 19.925 | 23.675 | 19.55 | 34.3 | 23.8 | 58.6 | 69.6 | 57.5 | 63.5 | 70.0 |

17EE73 HV 2020-2021

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Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering & Technology
- TUMKUR-572106.

# DEPARTMENT OF EEE

| SUBJECT | POWER SYSTEM ANALYSIS -II | SUBJECT CODE | 17EE71 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Formulate network matrices and models for solving load flow problems. |
| CO2 | Perform steady state power flow analysis of power systems using numerical iterative techniques. |
| CO3 | Solve issues of economic load dispatch and unit commitment problems. |
| CO4 | Analyze short circuit faults in power system networks using bus impedance matrix. |
| CO5 | Apply Point by Point method and RungeKutta Method to solve Swing Equation |

**PROGRAM OUTCOME**

**PO1**Engineering knowledge: An ability to apply knowledge of mathematics (including probability,
statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and
design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms
of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in
diverse teams, and in multidisciplinary settings.

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**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.
**PO11** Project management and finance: An ability to use the modern engineering tools, techniques,
skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.
**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | K S TANUJA | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | VII | SECTION | EEE | | | | | | | |
| SUBJECT | POWER SYSTEM ANALYSIS-II | | | | | SUBJECT CODE | 17EE71 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 3 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO2 | 3 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO3 | 3 | 3 | - | - | - | - | - | - | - | - | - | 2 |
| CO4 | 2 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO5 | 3 | 3 | 2 | - | - | - | - | - | - | - | - | - |
| AVERAGE | 2.8 | 3 | 2 | - | - | - | - | - | - | - | - | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.45 |

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**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 58 | 1.74 | 1.74 | | | | | | | | | | |
| CO2 | 87.3 | 2.61 | 2.61 | | | | | | | | | | |
| CO3 | 58 | 1.74 | 1.74 | | | | | | | | | | 1.16 |
| CO4 | 106.8 | 2.13 | 3.20 | | | | | | | | | | |
| CO5 | 94.2 | 2.82 | 2.82 | 1.88 | | | | | | | | | |
| AVERAGE | 80.86 | 2.20 | 2.42 | 1.88 | | | | | | | | | 1.16 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.91 |

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| SEM: VII, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | TOTAL | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1sv17EE002 | 10 | 19 | 29 | 10 | 20 | 30 | 10 | 21 | 31 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 16.2 | 25.2 | 16.2 | 36.2 | 27.2 | 0.56 | 0.87 | 0.56 | 1.06 | 0.94 |
| 1sv17EE004 | 10 | 19 | 29 | 10 | 20 | 30 | 10 | 21 | 31 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 16.2 | 25.2 | 16.2 | 36.2 | 27.2 | 0.56 | 0.87 | 0.56 | 1.06 | 0.94 |
| 1sv17EE005 | 10 | 19 | 29 | 10 | 20 | 30 | 10 | 21 | 31 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 16.2 | 25.2 | 16.2 | 36.2 | 27.2 | 0.56 | 0.87 | 0.56 | 1.06 | 0.94 |
| 1sv17EE009 | 10 | 19 | 29 | 10 | 20 | 30 | 10 | 21 | 31 | 2 | 2 | 2 | 2 | 2 | 10 | 7.8 | 7.8 | 7.8 | 7.8 | 7.8 | 39 | 19.8 | 28.8 | 19.8 | 39.8 | 30.8 | 0.68 | 0.99 | 0.68 | 1.17 | 1.06 |
| 1sv17EE010 | 10 | 19 | 29 | 10 | 20 | 30 | 10 | 21 | 31 | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | 25 | 17 | 26 | 17 | 37 | 28 | 0.59 | 0.90 | 0.59 | 1.09 | 0.97 |
| 1sv18EE400 | 10 | 17 | 27 | 10 | 18 | 28 | 10 | 19 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 16.2 | 23.2 | 16.2 | 34.2 | 25.2 | 0.56 | 0.80 | 0.56 | 1.01 | 0.87 |
| 1sv18EE402 | 10 | 17 | 27 | 10 | 18 | 28 | 10 | 19 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 16.8 | 23.8 | 16.8 | 34.8 | 25.8 | 0.58 | 0.82 | 0.58 | 1.02 | 0.89 |
| 1sv18EE403 | 10 | 19 | 29 | 10 | 20 | 30 | 10 | 21 | 31 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 16.2 | 25.2 | 16.2 | 36.2 | 27.2 | 0.56 | 0.87 | 0.56 | 1.06 | 0.94 |
| TOTAL | 80 | 148 | 228 | 80 | 156 | 236 | 80 | 164 | 244 | 16 | 16 | 16 | 16 | 16 | 80 | 38.6 | 38.6 | 38.6 | 38.6 | 38.6 | 193 | 134.6 | 202.6 | 134.6 | 290.6 | 218.6 | 4.64 | 6.99 | 4.64 | 8.55 | 7.54 |
| Total student | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| Average | 10 | 18.5 | 28.5 | 10 | 19.5 | 29.5 | 10 | 20.5 | 30.5 | 2 | 2 | 2 | 2 | 2 | 10 | 4.83 | 4.83 | 4.83 | 4.83 | 4.83 | 24.13 | 16.83 | 25.33 | 16.83 | 36.33 | 27.33 | 58.02 | 87.33 | 58.02 | 106.84 | 94.22 |

2020-21 PSA 2 17EE71

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& Electronics Engineering
ute of Engineering & Technology
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# DEPARTMENT OF EEE

| SUBJECT | POWER SYSTEM PROTECTION | SUBJECT CODE | 17EE72 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Discuss performance of protective relays, components of protection scheme and relay terminology over current protection |
| **CO2** | Explain the working of distance relays and the effects of arc resistance, power swings, line length and source impedance on performance of distance relays. |
| **CO3** | Discuss pilot protection, construction, operating principles and performance of differential relays and discuss protection of generators, motors, transformer and Bus Zone Protection. |
| **CO4** | Explain the construction and operation of different types of circuit breakers. |
| **CO5** | Outline features of fuse, causes of over voltages and its protection, also modern trends in Power System Protection |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

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**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | V RAJESH KUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | VII | SECTION | EEE | | | | | | | |
| SUBJECT | POWER SYSTEM PROTECTION | | | | | SUBJECT CODE | 17EE72 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 3 | - | - | - | - | - | - | - | - | - | - | - |
| CO2 | 2 | 2 | - | - | - | 2 | - | - | - | - | - | - |
| CO3 | 3 | - | - | - | - | 2 | - | - | - | - | - | - |
| CO4 | 3 | - | - | - | - | 2 | - | - | - | - | - | - |
| CO5 | 2 | 2 | - | - | - | 2 | 2 | - | - | - | - | 2 |
| AVERAGE | 2.62 | 2 | - | - | - | 2 | 2 | - | - | - | - | 2 |
| | | | | | | | | | | | | 2.12 |

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CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 63.4 | 1.90 | | | | | | | | | | | |
| CO2 | 85.9 | 1.71 | 1.71 | | | | 1.71 | | | | | | |
| CO3 | 63.4 | 1.9 | | | | | 1.26 | | | | | | |
| CO4 | 105.6 | 3.16 | | | | | 2.11 | | | | | | |
| CO5 | 92.8 | 1.85 | 1.85 | | | | 1.85 | 1.85 | | | | | 1.85 |
| AVERAGE | 82.22 | 2.1 | 1.78 | | | | 1.73 | 1.85 | | | | | 1.85 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.86 |

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Head of the Department
Electrical & Electronics Engineering
Siddaganga Institute of Engineering & Technology
TUMKUR-572103.

| SEM : VII, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | TOTAL | | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO3 | CO5 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1sw17EE0C2 | 10 | 15 | 25 | 10 | 16 | 26 | 10 | 17 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 38 | 19.6 | 24.6 | 19.6 | 35.6 | 26.6 | 0.676 | 0.848 | 0.676 | 1.047 | 0.917 |
| 1sw17EE004 | 10 | 18 | 28 | 10 | 19 | 29 | 10 | 20 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 7 | 7 | 7 | 7 | 7 | 35 | 19 | 27 | 19 | 38 | 29 | 0.655 | 0.931 | 0.655 | 1.118 | 1.000 |
| 1sw17EE005 | 10 | 19 | 29 | 10 | 20 | 30 | 10 | 21 | 31 | 2 | 2 | 2 | 2 | 2 | 10 | 8.8 | 8.8 | 8.8 | 8.8 | 8.8 | 44 | 20.8 | 29.8 | 20.8 | 40.8 | 31.8 | 0.717 | 1.028 | 0.717 | 1.200 | 1.097 |
| 1sw17EE009 | 10 | 17 | 27 | 10 | 18 | 28 | 10 | 19 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 23 | 16.2 | 23.2 | 16.2 | 34.2 | 25.2 | 0.559 | 0.800 | 0.559 | 1.006 | 0.869 |
| 1sw17EE030 | 10 | 17 | 27 | 10 | 18 | 28 | 10 | 19 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 37 | 19.4 | 26.4 | 19.4 | 37.4 | 28.4 | 0.669 | 0.910 | 0.669 | 1.100 | 0.979 |
| 1sw18EE400 | 10 | 15 | 25 | 10 | 16 | 26 | 10 | 17 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 17.8 | 22.8 | 17.8 | 33.8 | 24.8 | 0.634 | 0.786 | 0.634 | 0.994 | 0.855 |
| 1sw18EE402 | 10 | 16 | 26 | 10 | 17 | 27 | 10 | 18 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 17.4 | 23.4 | 17.4 | 34.4 | 25.4 | 0.600 | 0.807 | 0.600 | 1.012 | 0.876 |
| 1sw19EE401 | 10 | 15 | 25 | 10 | 16 | 26 | 10 | 17 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | 25 | 17 | 23 | 17 | 33 | 24 | 0.586 | 0.759 | 0.586 | 0.971 | 0.828 |
| TOTAL | 80 | 132 | 212 | 80 | 140 | 220 | 80 | 148 | 228 | 16 | 16 | 16 | 16 | 16 | 80 | 51.2 | 51.2 | 51.2 | 51.2 | 51.2 | 256 | 147.2 | 199.2 | 147.2 | 287.2 | 215.2 | 5.075862 | 6.868966 | 5.075862 | 8.447059 | 7.42069 |
| Total students | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Average | 10 | 16.5 | 26.5 | 10 | 17.5 | 27.5 | 10 | 18.5 | 28.5 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 18.4 | 24.9 | 18.4 | 35.9 | 26.9 | 63.4 | 85.9 | 63.4 | 105.6 | 92.8 |

2020-21 PSP 17EE72 V. Rajesh Kumar

PRINCIPAL
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7th 20-21

## DEPARTMENT OF EEE

| SUBJECT | High Voltage Engineering | SUBJECT CODE | 17EE73 |
|---|---|---|---|

**COURSE OUTCOME**

**CO1.** Explain conduction and breakdown phenomenon in gases, liquid dielectrics and breakdown Phenomenon in solid dielectrics.

**CO2.** Summarize generation of high voltages and currents

**CO3.** Outline measurement techniques for high voltages and currents

**CO4.** Summarize overvoltage phenomenon and insulation coordination in electric power systems.

**CO5.** Explain non-destructive testing of materials and electric apparatus, high-voltage testing of electric apparatus

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | MRS. SHWETHA T M | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | | | | | 2020-21 | |
| COURSE | B.E | SEMESTER | | VII | SECTION | | | | | | | |
| SUBJECT | High Voltage Engineering | | | | | SUBJECT CODE | | | | | 17EE73 | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 2 | 3 | 2 | 2 | 1 | | | | | | 2 | 1 |
| CO2 | 2 | 2 | 3 | 1 | 2 | | | | | | 2 | 1 |
| CO3 | 2 | 3 | 3 | 2 | 1 | | | | | | 2 | 1 |
| CO4 | 2 | 2 | 2 | 2 | 2 | | | | | | 2 | 1 |
| CO5 | 2 | 3 | 3 | 1 | 1 | | | | | | 2 | 1 |
| AVERAGE | 2 | 2.6 | 2.6 | 1.6 | 1.4 | | | | | | 2 | 1 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 1.88 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 58.6 | 1.172 | 1.758 | 1.172 | 1.172 | 0.586 | | | | | | 1.172 | 0.586 |
| CO2 | 69.6 | 1.392 | 1.392 | 2.088 | 0.696 | 1.392 | | | | | | 1.392 | 0.696 |
| CO3 | 57.5 | 1.15 | 1.725 | 1.725 | 1.15 | 0.575 | | | | | | 1.15 | 0.575 |
| CO4 | 63.5 | 1.27 | 1.27 | 1.27 | 1.27 | 1.27 | | | | | | 1.27 | 0.635 |
| CO5 | 70.0 | 1.4 | 2.1 | 2.1 | 0.7 | 0.7 | | | | | | 1.4 | 0.7 |
| AVERAGE | 63.84 | 1.2768 | 1.649 | 1.671 | 0.9976 | 0.9046 | | | | | | 1.2768 | 0.6384 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.202 |

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| SEM: V, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE HVE 2020-2021 | | | | | | Total | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1(34) | CO2(34) | CO3(34) | CO4(54) | CO5(34) | CO1(34) | CO2(34) | CO3(34) | CO4(54) | CO5(34) |
| 1SV17EE006 | 11 | 14 | 25 | 12 | 15 | 27 | 11 | 18 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 17.8 | 20.8 | 18.8 | 32.8 | 24.8 | 52 | 61 | 55 | 61 | 73 |
| 1SV17EE012 | 11 | 9 | 20 | 13 | 11 | 24 | 12 | 16 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 17.2 | 15.2 | 19.2 | 29.2 | 22.2 | 51 | 45 | 56 | 54 | 65 |
| 1SV18EE002 | 12 | 4 | 16 | 14 | 5 | 19 | 14 | 5 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 19.4 | 11.4 | 21.4 | 26.4 | 12.4 | 57 | 34 | 63 | 49 | 36 |
| 1SV18EE003 | 13 | 11 | 24 | 15 | 13 | 28 | 13 | 16 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 20.2 | 18.2 | 22.2 | 33.2 | 23.2 | 59 | 54 | 65 | 61 | 68 |
| 1SV18EE004 | 14 | 3 | 17 | 12 | 11 | 23 | 15 | 11 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 22.4 | 11.4 | 20.4 | 34.4 | 19.4 | 66 | 34 | 60 | 64 | 57 |
| 1SV18EE005 | 12 | -1 | 11 | 13 | 6 | 19 | 14 | 1 | 15 | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 19.4 | 6.4 | 20.4 | 27.4 | 8.4 | 57 | 19 | 60 | 51 | 25 |
| 1SV18EE006 | 13 | 11 | 24 | 14 | 11 | 25 | 12 | 17 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 9 | 9 | 9 | 9 | 9 | 45 | 24 | 22 | 25 | 34 | 28 | 71 | 65 | 74 | 63 | 82 |
| 1SV18EE007 | 14 | 5 | 19 | 12 | 4 | 16 | 14 | 5 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 22 | 20.4 | 11.4 | 18.4 | 24.4 | 11.4 | 60 | 34 | 54 | 45 | 34 |
| 1SV18EE008 | 12 | 6 | 18 | 13 | 7 | 20 | 12 | 10 | 22 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 12.2 | 19.2 | 25.2 | 16.2 | 54 | 36 | 56 | 47 | 46 |
| 1SV18EE009 | 12 | 4 | 16 | 14 | 5 | 19 | 15 | 4 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 6 | 16 | 22 | 6 | 41 | 18 | 47 | 41 | 18 |
| 1SV18EE011 | 13 | 11 | 24 | 12 | 16 | 28 | 13 | 7 | 20 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 21.4 | 19.4 | 20.4 | 37.4 | 15.4 | 63 | 57 | 60 | 69 | 45 |
| 1SV18EE012 | 10 | 2 | 12 | 13 | 4 | 17 | 14 | 5 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 16 | 15.2 | 7.2 | 18.2 | 23.2 | 10.2 | 45 | 21 | 54 | 43 | 30 |
| 1SV19EE400 | 14 | 9 | 23 | 11 | 13 | 24 | 14 | 11 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 21.2 | 16.2 | 18.2 | 34.2 | 18.2 | 62 | 48 | 54 | 63 | 54 |
| 1SV19EE401 | 12 | 11 | 23 | 10 | 15 | 25 | 12 | 18 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 18.8 | 17.8 | 16.8 | 33.8 | 24.8 | 55 | 52 | 49 | 63 | 73 |
| 1SV19EE402 | 14 | 3 | 17 | 14 | 9 | 23 | 13 | 13 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | 25 | 21 | 10 | 21 | 29 | 20 | 62 | 29 | 62 | 54 | 59 |
| 1SV19EE403 | 12 | 12 | 24 | 12 | 16 | 28 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 18.6 | 18.6 | 18.6 | 36.6 | 21.6 | 55 | 55 | 55 | 68 | 64 |
| 1SV19EE404 | 13 | 7 | 20 | 12 | 12 | 24 | 12 | 16 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 22 | 19.4 | 13.4 | 18.4 | 30.4 | 22.4 | 57 | 39 | 54 | 56 | 66 |
| 1SV19EE405 | 15 | 9 | 24 | 14 | 6 | 20 | 13 | 15 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 9.4 | 9.4 | 9.4 | 9.4 | 9.4 | 47 | 26.4 | 20.4 | 25.4 | 30.4 | 26.4 | 78 | 60 | 75 | 56 | 78 |
| TOTAL | 227 | 130 | 357 | 230 | 179 | 409 | 237 | 203 | 440 | 36 | 36 | 2 | 36 | 36 | 180 | 92 | 92 | 92 | 92 | 92 | 460 | 355 | 258 | 358 | 544 | 331 | 1044.118 | 758.8235 | 1052.941 | 1007.407 | 971.5294 |
| Total students | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 2 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 16 | 18 | 18 | 18 | 18 | 18 | 18 |
| Avearge | 12.61111 | 7.222222 | 19.83333 | 12.77778 | 9.944444 | 22.72222 | 13.16667 | 11.27778 | 24.44444 | 18 | 2 | 2 | 2 | 2 | 10 | 5.111111 | 5.111111 | 5.111111 | 5.111111 | 5.111111 | 25.55556 | 19.72222 | 14.33333 | 19.88889 | 30.22222 | 18.38889 | 58.01 | 42.16 | 58.50 | 55.97 | 54.09 |

18EE56 HVE 2020-2021

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Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering & Technology
TUMKUR-572106.

# DEPARTMENT OF EEE

| SUBJECT | UTILIZATION OF ELECTRICAL POWER | SUBJECT CODE | 17EE742 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Discuss different methods of electric heating & welding. |
| CO2 | Discuss the laws of electrolysis, extraction, refining of metals and electro deposition process. |
| CO3 | Discuss the laws of illumination, different types of lamps, lighting schemes and design of lighting systems. |
| CO4 | Analyze systems of electric traction, speed time curves and mechanics of train movement. |
| CO5 | Explain the motors used for electric traction, their control & braking and power supply system used for electric traction |

**PROGRAM OUTCOME**

**PO1**Engineering knowledge: An ability to apply knowledge of mathematics (including probability,
statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.
**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
**PO3** Design / development of solutions: An ability to design solution for engineering problems and
design system components or process to meet desired specifications and needs.
**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.
**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.
**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.
**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms
of the engineering practice.
**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in
diverse teams, and in multidisciplinary settings.
**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

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**PO11** Project management and finance: An ability to use the modern engineering tools, techniques,
skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.
**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | MUKTHA E T | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | VII | SECTION | EEE | | | | | | | |
| SUBJECT | UTILIZATION OF ELECTRICAL POWER | | | | | SUBJECT CODE | 17EE742 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | 3 | 2 | - | - | - | - | - | - | - | - | - |
| CO2 | 2 | 3 | 3 | 3 | - | - | - | - | - | - | - | 3 |
| CO3 | 2 | 3 | 2 | - | - | - | - | - | - | - | - | - |
| CO4 | 2 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO5 | 2 | 3 | - | - | - | - | - | - | - | - | - | 3 |
| AVERAGE | 2 | 3 | 2.3 | | | | | | | | | 3 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.575 |

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**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 60.26 | 1.20 | 1.80 | 1.20 | | | | | | | | | |
| CO2 | 80.95 | 1.61 | 2.42 | 2.42 | 2.42 | | | | | | | | 2.42 |
| CO3 | 60.26 | 1.20 | 1.80 | 1.20 | | | | | | | | | |
| CO4 | 101.40 | 2.02 | 3.04 | | | | | | | | | | |
| CO5 | 87.84 | 1.75 | 2.63 | | | | | | | | | | 2.63 |
| AVERAGE | 78.14 | 1.55 | 2.33 | 1.60 | 2.42 | | | | | | | | 2.52 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 8.404 |

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| SEM: V, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | TOTAL | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1sv17EE002 | 10 | 14 | 24 | 10 | 15 | 25 | 10 | 16 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 22 | 16.4 | 20.4 | 16.4 | 31.4 | 22.4 | 0.57 | 0.70 | 0.57 | 0.92 | 0.77 |
| 1sv17EE004 | 10 | 18 | 28 | 10 | 19 | 29 | 10 | 20 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 31 | 18.2 | 26.2 | 18.2 | 37.2 | 28.2 | 0.63 | 0.90 | 0.63 | 1.09 | 0.97 |
| 1sv17EE005 | 10 | 18 | 28 | 10 | 19 | 29 | 10 | 20 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 19.2 | 27.2 | 19.2 | 38.2 | 29.2 | 0.66 | 0.94 | 0.66 | 1.12 | 1.01 |
| 1sv17EE009 | 10 | 18 | 28 | 10 | 19 | 29 | 10 | 20 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 16.2 | 24.2 | 16.2 | 35.2 | 26.2 | 0.56 | 0.83 | 0.56 | 1.04 | 0.90 |
| 1sv17EE010 | 10 | 18 | 28 | 10 | 19 | 29 | 10 | 20 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 6 | 6 | 6 | 6 | 6 | 30 | 18 | 26 | 18 | 37 | 28 | 0.62 | 0.90 | 0.62 | 1.09 | 0.97 |
| 1sv18EE400 | 10 | 15 | 25 | 10 | 16 | 26 | 10 | 17 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 6 | 6 | 6 | 6 | 6 | 30 | 18 | 23 | 18 | 34 | 25 | 0.62 | 0.79 | 0.62 | 1.00 | 0.86 |
| 1sv18EE402 | 10 | 14 | 24 | 10 | 15 | 25 | 10 | 16 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 22 | 16.4 | 20.4 | 16.4 | 31.4 | 22.4 | 0.57 | 0.70 | 0.57 | 0.92 | 0.77 |
| 1sv18EE403 | 10 | 13 | 23 | 10 | 14 | 24 | 10 | 15 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 17.4 | 20.4 | 17.4 | 31.4 | 22.4 | 0.60 | 0.70 | 0.60 | 0.92 | 0.77 |
| TOTAL | 80 | 128 | 208 | 80 | 136 | 216 | 80 | 144 | 224 | 16 | 16 | 16 | 16 | 16 | 80 | 43.8 | 43.8 | 43.8 | 43.8 | 43.8 | 219 | 139.8 | 187.8 | 139.8 | 275.8 | 203.8 | 4.82 | 6.48 | 4.82 | 8.11 | 7.03 |
| Total students | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| Average | 10 | 16 | 26 | 10 | 17 | 27 | 10 | 18 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 5.475 | 5.475 | 5.475 | 5.475 | 5.475 | 27.375 | 17.48 | 23.48 | 17.48 | 34.48 | 25.48 | 60.26 | 80.95 | 60.26 | ##### | 87.84 |

2020-21 UEP 17EE742

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TUMKUR-572106.

# DEPARTMENT OF EEE

| SUBJECT | TESTING & COMMISSIONING OF POWER SYSTEM EQUIPMENTS | SUBJECT CODE | 17EE752 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Describe the process to plan, to control and implement commissioning of electrical equipments |
| CO2 | Differentiate the performance specifications of transformer and induction motors |
| CO3 | Demonstrate the routine tests for synchronous machines, transformer and induction motors and switchgears |
| CO4 | Describe the corrective and preventive maintenance of electrical equipments |
| CO5 | Explain the operation of an electrical equipments such as isolators, circuit breakers, induction motors |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | UMABAI | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-2021 | | |
| COURSE | B.E | SEMESTER | VII | SECTION | |
| SUBJECT | TESTING & COMMISSIONING OF POWER SYSTEM EQUIPMENTS | SUBJECT CODE | 18EE752 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 1 | | | 2 | 2 | 2 | 1 | 1 | | 1 |
| CO2 | 3 | 2 | 1 | | | 2 | 2 | 2 | 1 | 1 | | 1 |
| CO3 | 3 | 2 | 1 | | | 2 | 2 | 2 | 1 | 1 | | 1 |
| CO4 | 3 | 2 | 1 | | | 2 | 2 | 2 | 1 | 1 | | 1 |
| CO5 | 3 | 2 | 1 | | | 2 | 2 | 2 | 1 | 1 | | 1 |
| AVERAGE | 3 | 2 | 1 | | | 2 | 2 | 2 | 1 | 1 | | 1 |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 1.66 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 69.9 | 2.09 | 1.39 | 0.69 | | | 1.39 | 1.39 | 1.39 | 0.69 | 0.69 | | 0.69 |
| -CO2 | 28.96 | 0.86 | 0.579 | 0.28 | | | 0.579 | 0.579 | 0.579 | 0.28 | 0.28 | | 0.28 |
| CO3 | 66.89 | 2.00 | 1.33 | 0.66 | | | 1.33 | 1.33 | 1.33 | 0.66 | 0.66 | | 0.66 |
| CO4 | 46.36 | 1.39 | 0.92 | 0.46 | | | 0.92 | 0.92 | 0.92 | 0.46 | 0.46 | | 0.46 |
| CO5 | 82.41 | 2.47 | 1.64 | 0.82 | | | 1.64 | 1.64 | 1.64 | 0.82 | 0.82 | | 0.82 |
| AVERAGE | 58.9 | 2.93 | 1.17 | 0.58 | | | 1.17 | 1.17 | 1.17 | 0.58 | 0.58 | | 0.58 |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.10 |

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| SEM: V, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | TOTAL | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1sv17EE002 | 12 | 15 | 27 | 11 | 17 | 28 | 14 | 12 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 38 | 21.6 | 9.6 | 20.6 | 23.6 | 21.6 | 0.745 | 0.331 | 0.710 | 0.536 | 0.745 |
| 1sv17EE004 | 14 | 16 | 30 | 14 | 15 | 29 | 12 | 18 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 37 | 23.4 | 9.4 | 23.4 | 21.4 | 27.4 | 0.807 | 0.324 | 0.807 | 0.486 | 0.945 |
| 1sv17EE005 | 11 | 19 | 30 | 13 | 16 | 29 | 11 | 19 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 19.4 | 8.4 | 21.4 | 19.4 | 27.4 | 0.669 | 0.290 | 0.738 | 0.441 | 0.945 |
| 1sv17EE009 | 10 | 20 | 30 | 12 | 17 | 29 | 13 | 17 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 17.8 | 7.8 | 19.8 | 20.8 | 24.8 | 0.614 | 0.269 | 0.683 | 0.473 | 0.855 |
| 1sv17EE010 | 12 | 13 | 25 | 11 | 12 | 23 | 14 | 11 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 7 | 7 | 7 | 7 | 7 | 35 | 21 | 9 | 20 | 23 | 20 | 0.724 | 0.310 | 0.690 | 0.523 | 0.690 |
| 1sv18EE400 | 13 | 11 | 24 | 9 | 14 | 23 | 11 | 14 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 33 | 21.6 | 8.6 | 17.6 | 19.6 | 22.6 | 0.745 | 0.297 | 0.607 | 0.445 | 0.779 |
| 1sv18EE402 | 14 | 10 | 24 | 7 | 19 | 26 | 10 | 16 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | 25 | 21 | 7 | 14 | 17 | 23 | 0.724 | 0.241 | 0.483 | 0.386 | 0.793 |
| 1sv18EE403 | 9 | 19 | 28 | 11 | 15 | 26 | 11 | 17 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 16.4 | 7.4 | 18.4 | 18.4 | 24.4 | 0.566 | 0.255 | 0.634 | 0.418 | 0.841 |
| TOTAL | 95 | 123 | 218 | 88 | 125 | 213 | 96 | 124 | 220 | 16 | 16 | 16 | 16 | 16 | 80 | 51.2 | 51.2 | 51 | 51 | 51.2 | 256 | 162.2 | 67.2 | 155.2 | 163.2 | 191.2 | 5.593103 | 2.317241 | 5.351724 | 3.709091 | 6.593103 |
| Total stude | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Average | 11.9 | 15.4 | 27.3 | 11 | 15.6 | 26.6 | 12 | 16 | 27.5 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 20.275 | 8.4 | 19.4 | 20.4 | 23.9 | 69.914 | 28.966 | 66.897 | 46.364 | 82.414 |

2020-21 T &C 17EE752

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# EVEN SEMESTER

# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

SIRA ROAD, TUMKUR- 572 106.

20-21 Even

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | BASIC ELECTRICAL ENGINEERING | SUBJECT CODE | 18ELE23 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Analysis of Resistive Circuits and Solution of resistive circuits with independent sources |
| CO2 | Two Terminal Element Relationships for inductors and capacitors and analysis of magnetic circuits. |
| CO3 | Discuss the laws of illumination, different types of lamps, lighting schemes and design of lighting systems. |
| CO4 | Analysis of Single Phase AC Circuits, the representation of alternating quantities and determining the power in these circuits. |
| CO5 | Analysis of Single Phase AC Circuits, the representation of alternating quantities and determining the power in these circuits. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | TANUJA KS | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-21 | | |
| COURSE | B.E | SEMESTER | II | SECTION | EEE |
| SUBJECT | BASIC ELECTRICAL ENGINEERING | | | SUBJECT CODE | 21ELE23 |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| CO1 | 3 | 3 | | | | | | | | | | |
| CO2 | 3 | 2 | | | | | | | | | | |
| CO3 | 3 | 2 | | | | | | | | | | |
| CO4 | 3 | 2 | | | | | | | | | | |
| CO5 | 3 | 2 | | | | | | | | | | |
| AVERAGE | 3 | 2.2 | | | | | | | | | | |
| | | | | | | | | | | | OVERALL MAPPING OF SUBJECT | 2.6 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 53.655 | 1.61 | 1.61 | | | | | | | | | | |
| CO2 | 35.3636 | 1.06 | 0.71 | | | | | | | | | | |
| CO3 | 51.93 | 1.56 | 1.04 | | | | | | | | | | |
| CO4 | 61.5862 | 1.85 | 1.23 | | | | | | | | | | |
| CO5 | 61.586 | 1.85 | 1.23 | | | | | | | | | | |
| AVERAGE | 52.82 | 1.696 | 1.164 | | | | | | | | | | |
| | | | | | | | | | | | | FINAL ATTAINMENT LEVEL | 1.43 |

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| Academic year | 2020-21 | | SEM | 2 | | Total strength | | | 20 | | Subject | | BASIC ELECTRICAL ENGINEERING | | | | | Subject Code | 18ELE23 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IA TEST 1(30M) | | IA TEST 2(30M) | | | IA TEST 3(30M) | | | ASSIGNEMENT | | QUIZ(10 M) | | SEE MARKS(60) | | | | | Total Co- ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | CO1 | CO2 | TOTAL | CO4 | CO5 | CO3+CO | CO1 | CO2 | CO3 | CO4 | CO5 | CO1+CO | CO2 | CO3 | CO4 | CO5 | CO1+29 | CO2+44 | CO3+29 | CO4+29 | CO5+29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV19EE003 | 21 | 21 | 10 | 10 | 20 | 11 | 12 | 23 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 28 | 17 | 17 | 17 | 19 | 58.62069 | 38.63636 | 58.62069 | 42.06897 | 65.51724 |
| 1SV20EE003 | 22 | 22 | 15 | 15 | 30 | 15 | 15 | 30 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 31 | 24 | 24 | 24 | 24 | 82.75862 | 54.54545 | 82.75862 | 82.75862 | 82.75862 |
| 1SV20AE001 | 23 | 23 | 10 | 8 | 18 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 29.8 | 16.8 | 14.8 | 16.8 | 15.8 | 57.93103 | 38.18182 | 51.03448 | 57.93103 | 54.48276 |
| 1SV20AE002 | 21 | 21 | 9 | 4 | 6 | 6 | 12 | 18 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29.8 | 16.8 | 11.8 | 13.8 | 19.8 | 57.93103 | 38.18182 | 40.68966 | 47.58621 | 68.27586 |
| 1SV20EC001 | 19 | 19 | 8 | 8 | 16 | 13 | 12 | 25 | 2 | 2 | 2 | 2 | 2 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 29.6 | 15.6 | 15.6 | 20.4 | 19.6 | 53.7931 | 35.45455 | 53.7931 | 71.03448 | 67.58621 |
| 1SV20EC003 | 15 | 15 | 5 | 6 | 11 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 21.6 | 11.6 | 12.6 | 16.6 | 15.6 | 40 | 26.36364 | 43.44828 | 57.24138 | 53.7931 |
| 1SV20EC004 | 14 | 14 | 5 | 4 | 9 | 12 | 13 | 25 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 20.2 | 11.2 | 10.2 | 18.2 | 19.2 | 38.62069 | 25.45455 | 35.17241 | 62.75862 | 66.2069 |
| 1SV20EC005 | 21 | 21 | 7 | 8 | 15 | 5 | 4 | 9 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 27.6 | 13.6 | 14.6 | 21.4 | 10.6 | 46.89655 | 30.90909 | 50.34483 | 40 | 36.55172 |
| 1SV20EC006 | 16 | 16 | 4 | 5 | 9 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 21.8 | 9.8 | 10.8 | 15.8 | 15.6 | 33.7931 | 22.27273 | 37.24138 | 54.48276 | 54.48276 |
| 1SV20EC007 | 21 | 21 | 5 | 5 | 10 | 10 | 7 | 17 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 28 | 12 | 12 | 17 | 14 | 41.37931 | 27.27273 | 41.37931 | 58.62069 | 48.27586 |
| 1SV20EC008 | 21 | 21 | 7 | 8 | 15 | 12 | 11 | 23 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 28.8 | 14.8 | 15.8 | 19.8 | 18.8 | 51.03448 | 33.63636 | 54.48276 | 68.27586 | 64.82759 |
| 1SV20EC009 | 19 | 19 | 5 | 6 | 11 | 10 | 8 | 18 | 2 | 2 | 2 | 2 | 2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 25.4 | 11.4 | 12.4 | 16.4 | 14.4 | 39.31034 | 25.90909 | 42.75862 | 56.55172 | 49.65517 |
| 1SV20EC010 | 22 | 22 | 6 | 6 | 11 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 28.8 | 15.8 | 12.8 | 16.8 | 16.8 | 54.48276 | 35.90909 | 44.13793 | 57.93103 | 57.93103 |
| 1SV20EC012 | 19 | 19 | 12 | 6 | 18 | 4 | 4 | 8 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 24.8 | 17.8 | 11.8 | 9.8 | 9.8 | 61.37931 | 40.45455 | 40.68966 | 33.7931 | 33.7931 |
| 1SV20EC013 | 13 | 13 | 4 | 5 | 9 | 11 | 11 | 22 | 2 | 2 | 2 | 2 | 2 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 19.4 | 10.4 | 11.4 | 17.4 | 17.4 | 35.86207 | 23.63636 | 39.31034 | 60 | 60 |
| 1SV20EC014 | 25 | 25 | 15 | 15 | 30 | 15 | 15 | 30 | 2 | 2 | 2 | 2 | 2 | 6.2 | 6.2 | 6.2 | 6.2 | 6.2 | 33.2 | 23.2 | 23.2 | 23.2 | 23.2 | 80 | 52.72727 | 80 | 80 | 80 |
| 1SV20EC015 | 22 | 22 | 7 | 7 | 14 | 14 | 14 | 28 | 2 | 2 | 2 | 2 | 2 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 30.6 | 15.6 | 15.6 | 21.4 | 22.6 | 53.7931 | 35.45455 | 53.7931 | 77.93103 | 77.93103 |
| 1SV20EC016 | 23 | 23 | 12 | 12 | 24 | 15 | 15 | 30 | 2 | 2 | 2 | 2 | 2 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 29.8 | 20.8 | 20.8 | 27.6 | 25.8 | 71.72414 | 47.27273 | 71.72414 | 62.06897 | 62.06897 |
| 1SV20EC017 | 24 | 24 | 13 | 13 | 26 | 13 | 14 | 27 | 2 | 2 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 33 | 22 | 22 | 27 | 24 | 75.86207 | 50 | 75.86207 | 75.86207 | 79.31034 |
| 1SV20EC018 | 23 | 23 | 5 | 6 | 11 | 7 | 8 | 15 | 2 | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 4 | 29 | 11 | 11 | 15 | 14 | 37.93103 | 25 | 41.37931 | 44.82759 | 48.27586 |
| | | | | | | | | | | | | | | | | | | | 27.33 | 15.56 | 15.06 | 17.86 | 17.86 | 53.65517 | 35.36364 | 51.93103 | 61.58621 | 61.58621 |

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SIRA ROAD, TUMKUR- 572 106.

20-21

## DEPARTMENT OF EEE

| SUBJECT | POWER GENERATION ECONOMICS | SUBJECT CODE | 18EE42 |
|---|---|---|---|

**COURSE OUTCOME**

**CO1.** Describe the working of hydroelectric, steam, nuclear power plants and state functions of major equipment of the power plants.

**CO2.** Classify various substations and explain the functions of major equipments in substations.

**CO3.** Explain the types of grounding and its importance

**CO4.** Infer the economic aspects of power system operation and its effects

**CO5.** Explain the importance of power factor improvement.

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | MRS. SWETHA T M | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | 2020-21 | | | | | | |
| COURSE | B.E | SEMESTER | | SECTION | | | | | | | | |
| SUBJECT | POWER GENERATION ECONOMICS | | | SUBJECT CODE | | 18EE42 | | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 3 | 3 | 2 | | | 2 | 2 | 1 | 1 | 1 | | 1 |
| CO2 | 2 | 2 | 2 | | | 2 | 1 | 1 | 1 | 1 | | 1 |
| CO3 | 3 | 2 | 2 | | | 2 | 2 | 1 | 1 | 1 | | 1 |
| CO4 | 2 | 2 | 2 | | | 2 | 2 | 1 | 1 | 1 | | 1 |
| CO5 | 3 | 2 | 2 | | | 2 | 1 | 1 | 1 | 1 | | 1 |
| AVERAGE | 2.6 | 2.2 | 2 | | | 2 | 1.6 | 1 | 1 | 1 | | 1 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 1.6 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 49.4 | 1.48 | 1.48 | 0.99 | | | 0.99 | 0.99 | 0.49 | 0.49 | 0.49 | | 0.49 |
| CO2 | 48.7 | 0.97 | 0.97 | 0.97 | | | 0.97 | 0.49 | 0.49 | 0.49 | 0.49 | | 0.49 |
| CO3 | 56.6 | 1.70 | 1.13 | 1.13 | | | 1.13 | 1.13 | 0.57 | 0.57 | 0.57 | | 0.57 |
| CO4 | 56.1 | 1.12 | 1.12 | 1.12 | | | 1.12 | 1.12 | 0.56 | 0.56 | 0.56 | | 0.56 |
| CO5 | 54.1 | 1.62 | 1.08 | 1.08 | | | 1.08 | 0.54 | 0.54 | 0.54 | 0.54 | | 0.54 |
| AVERAGE | 52.98 | 1.380 | 1.158 | 1.060 | | | 1.060 | 0.854 | 0.530 | 0.530 | 0.530 | | 0.530 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 0.847 |

Head of the Department
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| SEM: IV, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE PGE 2020-2021 | | | | | | TOTAL | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTA | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 10 | 7 | 17 | 15 | 8 | 23 | 14 | 12 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 15.8 | 12.8 | 20.8 | 27.8 | 17.8 | 46 | 38 | 61 | 51 | 52 |
| 1SV19EE001 | 12 | 14 | 26 | 12 | 16 | 28 | 13 | 17 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 18.6 | 20.6 | 18.6 | 35.6 | 23.6 | 55 | 61 | 55 | 66 | 69 |
| 1SV19EE002 | 13 | 7 | 20 | 14 | 9 | 23 | 13 | 13 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 17 | 18.4 | 12.4 | 19.4 | 27.4 | 18.4 | 54 | 36 | 57 | 51 | 54 |
| 1SV19EE005 | 8 | 12 | 20 | 13 | 11 | 24 | 9 | 19 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 15.8 | 19.8 | 20.8 | 27.8 | 26.8 | 46 | 58 | 61 | 51 | 79 |
| 1SV19EE006 | 11 | 7 | 18 | 10 | 10 | 20 | 12 | 13 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 18 | 16.6 | 12.6 | 15.6 | 27.6 | 18.6 | 49 | 37 | 46 | 51 | 55 |
| 1SV19EE007 | 15 | 15 | 30 | 13 | 11 | 24 | 16 | 14 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 22.8 | 22.8 | 20.8 | 34.8 | 21.8 | 67 | 67 | 61 | 64 | 64 |
| 1SV19EE008 | 9 | 9 | 18 | 9 | 11 | 20 | 14 | 8 | 22 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 14.8 | 14.8 | 14.8 | 30.8 | 13.8 | 44 | 44 | 44 | 57 | 41 |
| 1SV19EE009 | 10 | 10 | 20 | 12 | 13 | 25 | 16 | 11 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 15.8 | 15.8 | 17.8 | 34.8 | 16.8 | 46 | 46 | 52 | 64 | 49 |
| 1SV19EE011 | 12 | 17 | 29 | 14 | 14 | 28 | 17 | 13 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 19.8 | 24.8 | 21.8 | 38.8 | 20.8 | 58 | 73 | 64 | 72 | 61 |
| 1SV19EE012 | 7 | 8 | 15 | 16 | 4 | 20 | 14 | 5 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 19 | 14.8 | 15.8 | 23.8 | 25.8 | 12.8 | 44 | 46 | 70 | 48 | 38 |
| 1SV19EE013 | 13 | 9 | 22 | 13 | 10 | 23 | 13 | 14 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 16 | 18.2 | 14.2 | 18.2 | 28.2 | 19.2 | 54 | 42 | 54 | 52 | 56 |
| 1SV19EE014 | 9 | 4 | 13 | 15 | 2 | 17 | 10 | 5 | 15 | 2 | 2 | 2 | 2 | 2 | 10 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 11 | 13.2 | 8.2 | 19.2 | 16.2 | 9.2 | 39 | 24 | 56 | 30 | 27 |
| 1SV19EE016 | 12 | 8 | 20 | 9 | 14 | 23 | 16 | 10 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 17.8 | 13.8 | 14.8 | 35.8 | 15.8 | 52 | 41 | 44 | 66 | 46 |
| 1SV19EE017 | 9 | 12 | 21 | 12 | 10 | 22 | 13 | 13 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 34 | 17.8 | 20.8 | 20.8 | 31.8 | 21.8 | 52 | 61 | 61 | 59 | 64 |
| 1SV19EE020 | 12 | 7 | 19 | 12 | 10 | 22 | 13 | 12 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 18.8 | 13.8 | 18.8 | 29.8 | 18.8 | 55 | 41 | 55 | 55 | 55 |
| 1SV20EE400 | 10 | 7 | 17 | 13 | 11 | 24 | 9 | 16 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 23 | 16.8 | 13.8 | 19.8 | 26.8 | 22.8 | 49 | 41 | 58 | 50 | 67 |
| 1SV20EE401 | 6 | 13 | 19 | 16 | 8 | 24 | 16 | 10 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 12.2 | 19.2 | 22.2 | 30.2 | 16.2 | 36 | 56 | 65 | 56 | 48 |
| 1SV20EE402 | 8 | 16 | 24 | 12 | 14 | 26 | 15 | 10 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 14.2 | 22.2 | 18.2 | 35.2 | 16.2 | 42 | 65 | 54 | 65 | 48 |
| Total | 186 | 182 | 368 | 230 | 186 | 416 | 243 | 215 | 458 | 36 | 36 | 36 | 36 | 36 | 180 | 80.2 | 80.2 | 80.2 | 80.2 | 80.2 | 390 | 302.2 | 298.2 | 346.2 | 545.2 | 331.2 | 889 | 877 | 1018 | 1010 | 974 |
| otal student | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Average | 10.33 | 10.11 | 20.44 | 12.8 | 10.3 | 23.1 | 13.5 | 11.9 | 25.4 | 2 | 2 | 2 | 2 | 2 | 10 | 4.456 | 4.4556 | 4.4556 | 4.46 | 4.456 | 21.6667 | 16.7889 | 16.57 | 19.233 | 30.289 | 18.4 | 49.4 | 48.7 | 56.6 | 56.1 | 54.1 |

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SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS

| SUBJECT | TRANSMISSION & DISTRIBUTION | SUBJECT CODE | 18EE43 |
|---|---|---|---|

**COURSE OUTCOME:**

**CO1:** Explain transmission and distribution scheme, identify the importance of different Transmission systems and types of insulators.
**CO2:**Analyze and compute the parameters of the transmission line for different configurations.
**CO3:** Assess the performance of overhead lines.
**CO4:** Interpret corona, explain the use of underground cables.
**CO5:** Classify different types of distribution systems; examine its quality & reliability.

**PROGRAM OUTCOMES:**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.
**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.
**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.
**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.
**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.
**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.
**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.
**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | TANUJA K.S | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | IV | SECTION | EEE | | | | | | | |
| SUBJECT | TRANSMISSION & DISTRIBUTION | | | SUBJECT CODE | 18EE43 | | | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18EE54.1 | 3 | | 2 | | 3 | 2 | 2 | | | 2 | | |
| 18EE54.2 | 1 | 2 | 2 | | 2 | | 2 | | | | | |
| 18EE54.3 | 1 | 3 | 3 | 3 | | 2 | | | | 2 | 2 | |
| 18EE54.4 | 1 | 3 | 3 | | 2 | | | | | | | |
| 18EE54.5 | 2 | 3 | 3 | 3 | | | | | | 2 | 2 | |
| Avg Map | 1.6 | 2.75 | 2.6 | 3 | 2.33 | 2 | 2 | | | 2 | 2 | |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.25 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 74.52 | 2.24 | | 1.49 | | 2.24 | 1.49 | 1.49 | | | 1.49 | | |
| CO2 | 27.15 | 0.27 | 0.543 | 0.543 | | 0.543 | | 0.543 | | | | | |
| CO3 | 41.95 | 0.42 | 1.26 | 1.26 | 1.26 | | 0.84 | | | | 0.84 | 0.84 | |
| CO4 | 65.52 | 0.66 | 1.97 | 1.97 | | 1.31 | | | | | | | |
| CO5 | 66.86 | 1.34 | 2 | 2 | 2 | | | | | | 1.34 | 1.34 | |
| AVERAGE | 65.496 | 1 | 1.44 | 1.45 | 1.63 | 1.37 | 1.17 | 1.02 | | | 1.22 | 1.09 | |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.27 |

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PRINCIPAL
SIET TUMKURU

EEE

| Academic ye | 2020-21 | | SEM | 4 | | Total strength | | | 19 | | Subject | | TRANSMISSION AND DISTRIBUTION | | | | | Subject Code | 18EE43 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EM/CSE/ EC | IA TEST 1(30M) | | IA TEST 2(30M) | | | IA TEST 3(30M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=46 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 17 | 17 | 4 | 4 | 8 | 12 | 13 | 25 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 22.8 | 9.8 | 9.8 | 17.8 | 18.8 | 78.62069 | 22.27273 | 33.7931 | 61.37931 | 64.82759 |
| 1SV19EE001 | 14 | 14 | 7 | 8 | 15 | 14 | 14 | 28 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 20.6 | 13.6 | 14.6 | 20.6 | 20.6 | 71.03448 | 30.90909 | 50.34483 | 71.03448 | 71.03448 |
| 1SV19EE002 | 16 | 16 | 3 | 2 | 5 | 11 | 11 | 22 | 2 | 2 | 2 | 2 | 2 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 21.4 | 8.4 | 7.4 | 16.4 | 16.4 | 73.7931 | 19.09091 | 25.51724 | 56.55172 | 56.55172 |
| 1SV19EE005 | 18 | 18 | 6 | 6 | 12 | 12 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 25.8 | 13.8 | 13.8 | 19.8 | 19.8 | 88.96552 | 31.36364 | 47.58621 | 68.27586 | 68.27586 |
| 1SV19EE006 | 6 | 6 | 4 | 5 | 9 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 11.6 | 9.6 | 10.6 | 15.6 | 15.6 | 40 | 21.81818 | 36.55172 | 53.7931 | 53.7931 |
| 1SV19EE007 | 17 | 17 | 8 | 9 | 17 | 12 | 15 | 27 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 24.8 | 15.8 | 16.8 | 19.8 | 22.8 | 85.51724 | 35.90909 | 57.93103 | 68.27586 | 78.62069 |
| 1SV19EE008 | 16 | 16 | 4 | 4 | 8 | 20 | 20 | 40 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 21.8 | 9.8 | 9.8 | 25.8 | 25.8 | 75.17241 | 22.27273 | 33.7931 | 88.96552 | 88.96552 |
| 1SV19EE009 | 16 | 16 | 3 | 3 | 6 | 10 | 10 | 20 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 21.8 | 8.8 | 8.8 | 15.8 | 15.8 | 75.17241 | 20 | 30.34483 | 54.48276 | 54.48276 |
| 1SV19EE011 | 19 | 19 | 8 | 9 | 17 | 12 | 16 | 28 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 26.8 | 15.8 | 16.8 | 19.8 | 23.8 | 92.41379 | 35.90909 | 57.93103 | 68.27586 | 82.06897 |
| 1SV19EE012 | 12 | 12 | 7 | 8 | 15 | 11 | 11 | 22 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 17.8 | 12.8 | 13.8 | 16.8 | 16.8 | 61.37931 | 29.09091 | 47.58621 | 57.93103 | 57.93103 |
| 1SV19EE013 | 18 | 18 | 8 | 8 | 16 | 12 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 23.2 | 13.2 | 13.2 | 17.2 | 17.2 | 80 | 30 | 45.51724 | 59.31034 | 59.31034 |
| 1SV19EE014 | 12 | 12 | 1 | 1 | 2 | 1 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 16.2 | 5.2 | 5.2 | 5.2 | 6.2 | 55.86207 | 11.81818 | 17.93103 | 17.93103 | 21.37931 |
| 1SV19EE016 | 17 | 17 | 7 | 7 | 14 | 12 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 22.8 | 12.8 | 12.8 | 17.8 | 17.8 | 78.62069 | 29.09091 | 44.13793 | 61.37931 | 61.37931 |
| 1SV19EE017 | 18 | 18 | 10 | 10 | 20 | 20 | 20 | 40 | 2 | 2 | 2 | 2 | 2 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 26.8 | 18.8 | 18.8 | 28.8 | 28.8 | 92.41379 | 42.72727 | 64.82759 | 99.31034 | 99.31034 |
| 1SV19EE020 | 13 | 13 | 7 | 7 | 14 | 15 | 14 | 29 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 19.8 | 13.8 | 13.8 | 21.8 | 20.8 | 68.27586 | 31.36364 | 47.58621 | 75.17241 | 71.72414 |
| 1SV20EE400 | 13 | 13 | 4 | 4 | 8 | 15 | 12 | 27 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 19.6 | 10.6 | 10.6 | 21.6 | 18.6 | 67.58621 | 24.09091 | 36.55172 | 74.48276 | 64.13793 |
| 1SV20EE401 | 18 | 18 | 3 | 2 | 5 | 15 | 17 | 32 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 24.2 | 9.2 | 8.2 | 21.2 | 23.2 | 83.44828 | 20.90909 | 28.27586 | 73.10345 | 80 |
| 1SV20EE402 | 15 | 15 | 7 | 8 | 15 | 14 | 14 | 28 | 2 | 2 | 7 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21.2 | 13.2 | 14.2 | 20.2 | 20.2 | 73.10345 | 30 | 48.96552 | 69.65517 | 69.65517 |
| | | | | | | | | | | | | | | | | | | | 21.61111 | 11.94444 | 12.16667 | 19 | 19.38889 | 74.52107 | 27.14646 | 41.95402 | 65.51724 | 66.85824 |

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# DEPARTMENT OF EEE

| SUBJECT | ELECTRIC MOTORS | SUBJECT CODE | 18EE44 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Explain the construction, operation and classification of DC Motor, AC motor and Special purpose motors |
| CO2 | Describe the performance characteristics & applications of Electric motors. |
| CO3 | Demonstrate and explain the methods of testing of DC machines and determine losses and Efficiency |
| CO4 | Control the speed of DC motor and induction motor. |
| CO5 | Explain the starting methods, equivalent circuit and phasor diagrams, torque angle, effect of change in excitation and change in load, hunting and damping of synchronous motors |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | UMABAI | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-2021 | | | | | |
| COURSE | B.E | SEMESTER | IV | SECTION | | | | | | | | |
| SUBJECT | ELECTRIC MOTORS | | | | | SUBJECT CODE | 18EE44 | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 1 |
| CO2 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 1 |
| CO3 | 3 | 2 | 3 | 2 | 2 | 2 | | | | | | 1 |
| CO4 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 1 |
| CO5 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | 2 |
| AVERAGE | 3 | 2 | 2.2 | 2 | 2 | 2 | | | | | | 1.2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.05 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 43.7 | 1.31 | 0.874 | 0.874 | 0.874 | 0.874 | 0.874 | | | | | | 0.437 |
| CO2 | 42.9 | 1.28 | 0.858 | 0.858 | 0.858 | 0.858 | 0.858 | | | | | | 0.429 |
| CO3 | 49.0 | 1.47 | 0.294 | 1.47 | 0.294 | 0.294 | 0.294 | | | | | | 0.49 |
| CO4 | 50.8 | 1.52 | 1.016 | 1.016 | 1.016 | 1.016 | 1.016 | | | | | | 0.508 |
| CO5 | 46.2 | 1.38 | 0.924 | 0.924 | 0.924 | 0.924 | 0.924 | | | | | | 0.462 |
| AVERAGE | 46.52 | 1.39 | 0.79 | 1.02 | 0.79 | 0.79 | 0.79 | | | | | | 0.465 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 0.862 |

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| | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | TOTAL | | | | | AVERAGE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 9 | 6 | 15 | 10 | 9 | 19 | 11 | 6 | 17 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 14.8 | 11.8 | 15.8 | 25.8 | 11.8 | 44 | 35 | 46 | 48 | 35 |
| 1SV19EE001 | 10 | 14 | 24 | 13 | 13 | 26 | 18 | 7 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 16.6 | 20.6 | 19.6 | 37.6 | 13.6 | 49 | 61 | 58 | 70 | 40 |
| 1SV19EE002 | 4 | 4 | 8 | 5 | 5 | 10 | 10 | 5 | 15 | 2 | 2 | 2 | 2 | 2 | 10 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 17 | 9.4 | 9.4 | 10.4 | 20.4 | 10.4 | 28 | 28 | 31 | 38 | 31 |
| 1SV19EE005 | 9 | 3 | 12 | 7 | 10 | 17 | 9 | 10 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 16.8 | 10.8 | 14.8 | 26.8 | 17.8 | 49 | 32 | 44 | 50 | 52 |
| 1SV19EE006 | 6 | 4 | 10 | 8 | 9 | 17 | 8 | 7 | 15 | 2 | 2 | 2 | 2 | 2 | 10 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 18 | 11.6 | 9.6 | 13.6 | 22.6 | 12.6 | 34 | 28 | 40 | 42 | 37 |
| 1SV19EE007 | 12 | 18 | 30 | 16 | 14 | 30 | 14 | 16 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 19.8 | 25.8 | 23.8 | 35.8 | 23.8 | 58 | 76 | 70 | 66 | 70 |
| 1SV19EE008 | 5 | 4 | 9 | 8 | 4 | 12 | 10 | 5 | 15 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 10.8 | 9.8 | 13.8 | 19.8 | 10.8 | 32 | 29 | 41 | 37 | 32 |
| 1SV19EE009 | 10 | 6 | 16 | 9 | 9 | 18 | 7 | 10 | 17 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 15.8 | 11.8 | 14.8 | 21.8 | 15.8 | 46 | 35 | 44 | 40 | 46 |
| 1SV19EE011 | 12 | 18 | 30 | 14 | 16 | 30 | 16 | 14 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 19.8 | 25.8 | 21.8 | 39.8 | 21.8 | 58 | 76 | 64 | 74 | 64 |
| 1SV19EE012 | 5 | 6 | 11 | 10 | 8 | 18 | 9 | 10 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 10.8 | 11.8 | 15.8 | 22.8 | 15.8 | 32 | 35 | 46 | 42 | 46 |
| 1SV19EE013 | 14 | 10 | 24 | 12 | 14 | 26 | 12 | 13 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 16 | 19.2 | 15.2 | 17.2 | 31.2 | 18.2 | 56 | 45 | 51 | 58 | 54 |
| 1SV19EE014 | 6 | 5 | 11 | 6 | 13 | 19 | 9 | 6 | 15 | 2 | 2 | 2 | 2 | 2 | 10 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 11 | 10.2 | 9.2 | 10.2 | 26.2 | 10.2 | 30 | 27 | 30 | 49 | 30 |
| 1SV19EE016 | 7 | 3 | 10 | 8 | 11 | 19 | 6 | 10 | 16 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 12.8 | 8.8 | 13.8 | 22.8 | 15.8 | 38 | 26 | 41 | 42 | 46 |
| 1SV19EE017 | 15 | 15 | 30 | 18 | 12 | 30 | 17 | 13 | 30 | 2 | 2 | 2 | 2 | 2 | 10 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 34 | 23.8 | 23.8 | 26.8 | 37.8 | 21.8 | 70 | 70 | 79 | 70 | 64 |
| 1SV19EE020 | 5 | 7 | 12 | 7 | 10 | 17 | 9 | 10 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 11.8 | 13.8 | 13.8 | 25.8 | 16.8 | 35 | 41 | 41 | 48 | 49 |
| 1SV20EE400 | 10 | 8 | 18 | 11 | 9 | 20 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 16.6 | 14.6 | 17.6 | 25.6 | 15.6 | 49 | 43 | 52 | 47 | 46 |
| 1SV20EE401 | 6 | 7 | 13 | 11 | 6 | 17 | 9 | 6 | 15 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 12.2 | 13.2 | 17.2 | 21.2 | 12.2 | 36 | 39 | 51 | 39 | 36 |
| 1SV20EE402 | 9 | 11 | 20 | 13 | 12 | 25 | 12 | 12 | 24 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 15.2 | 17.2 | 19.2 | 30.2 | 18.2 | 45 | 51 | 56 | 56 | 54 |
| TOTAL | 154 | 149 | 303 | 186 | 184 | 370 | 196 | 169 | 365 | 36 | 36 | 36 | 36 | 36 | 180 | 78 | 78 | 78 | 78 | 78 | 390 | 268 | 263 | 300 | 494 | 283 | 788 | 774 | 882 | 915 | 832 |
| Total students | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 3.6 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Avearge | 8.56 | 8.28 | 16.83 | 10.3 | 10.22 | 20.56 | 10.9 | 9.39 | 20.28 | 2 | 2 | 2 | 2 | 2 | 10 | 4.33 | 4.33 | 4.33 | 4.33 | 4.33 | 21.67 | 14.89 | 14.61 | 16.67 | 27.44 | 15.72 | 43.8 | 43.0 | 49.0 | 50.8 | 46.2 |

18EE44 ELECTRIC MOTORS

2020-21

PRINCIPAL
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| | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY<br>SIRA ROAD, TUMKUR- 572 106. |
|---|---|

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | ELECTROMAGNETIC FIELD THEORY | SUBJECT CODE | 18EE45 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Use different coordinate systems , Coulomb's Law and Gauss Law for the evaluation of electric fields produced by different charge configurations. |
| CO2 | Calculate the energy and potential due to a system of charges & Explain the behavior of electric field across a boundary conditions |
| CO3 | Explain the Poisson's, Laplace equations and behavior of steady magnetic fields. |
| CO4 | Explain the behavior of magnetic fields and magnetic materials. |
| CO5 | Asses time varying fields and propagation of waves in different media. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | V.RAJESH KUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | IV | SECTION | | | EEE | | | | | |
| SUBJECT | ELECTROMAGNETIC FIELD THEORY | | | | | SUBJECT CODE | 18EE45 | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **CO1** | 2 | 3 | 1 | 1 | | | | | | | | 2 |
| **CO2** | 2 | 3 | 1 | 1 | | | | | | | | 2 |
| **CO3** | 1 | 2 | 1 | 1 | | | | | | | | 1 |
| **CO4** | 3 | 3 | 1 | 1 | | | | | | | | 3 |
| **CO5** | 2 | 3 | 1 | 1 | | | | | | | | 2 |
| **AVERAGE** | 2 | 2.8 | 1 | 1 | | | | | | | | 2 |
| | | | | | | | | | | | **OVERALL MAPPING OF SUBJECT** | 1.63 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 40.67 | **0.81** | **1.13** | **0.40** | **0.41** | | | | | | | | **0.81** |
| **CO2** | 39.41 | **0.78** | **1.10** | **0.39** | **0.39** | | | | | | | | **0.78** |
| **CO3** | 40.93 | **0.81** | **1.14** | **0.40** | **0.40** | | | | | | | | **0.81** |
| **CO4** | 40.93 | **0.81** | **1.14** | **0.40** | **0.40** | | | | | | | | **0.81** |
| **CO5** | 40.93 | **0.81** | **1.14** | 0.40 | 0.40 | | | | | | | | **0.81** |
| **AVERAGE** | **40.57** | **0.80** | **1.13** | **0.4** | **0.4** | | | | | | | | **0.80** |
| | | | | | | | | | | | | **FINAL ATTAINMENT LEVEL** | **0.70** |

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STAFF NAME: V RAJESH KUMAR

| Academic year | 2020-21 | | | SEM | 4 | | Total strength | | | 18 | | Subject | | ELECTROMAGETIC FIELD THEORY | | | Subject Code | 18EE45 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IA TEST 1(40M) | | | IA TEST 2(40) | | | IA TEST 3(40M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 11.6 | 17.4 | 11.6 | 11.6 | 11.6 | 40 | 39.54545 | 40 | 40 | 40 |
| 1SV19EE001 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 12.4 | 18.2 | 12.4 | 12.4 | 12.4 | 42.75862 | 41.36364 | 42.75862 | 42.75862 | 42.75862 |
| 1SV19EE002 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 10.4 | 15.4 | 10.4 | 10.4 | 10.4 | 35.86207 | 35 | 35.86207 | 35.86207 | 35.86207 |
| 1SV19EE005 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 13.6 | 19.4 | 13.6 | 13.6 | 13.6 | 46.89655 | 44.09091 | 46.89655 | 46.89655 | 46.89655 |
| 1SV19EE006 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 4.6 | 5 | 9.6 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 10.2 | 14.8 | 10.2 | 10.2 | 10.6 | 35.17241 | 33.63636 | 35.17241 | 35.17241 | 36.55172 |
| 1SV19EE007 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 13.4 | 19 | 13.4 | 13.4 | 13.4 | 46.2069 | 43.18182 | 46.2069 | 46.2069 | 46.2069 |
| 1SV19EE008 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 11.1 | 16.4 | 11.1 | 11.1 | 11.1 | 38.27586 | 37.27273 | 38.27586 | 38.27586 | 38.27586 |
| 1SV19EE009 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 11.4 | 17 | 11.4 | 11.4 | 11.4 | 39.31034 | 38.63636 | 39.31034 | 39.31034 | 39.31034 |
| 1SV19EE011 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 14.3 | 20.8 | 14.3 | 14.3 | 14.3 | 49.31034 | 47.27273 | 49.31034 | 49.31034 | 49.31034 |
| 1SV19EE012 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 11.3 | 16.8 | 11.3 | 11.3 | 11.3 | 38.96552 | 38.18182 | 38.96552 | 38.96552 | 38.96552 |
| 1SV19EE013 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 10.5 | | | | | 36.2069 | | | | |
| 1SV19EE014 | 4 | 4 | 8 | 4 | 4 | 8 | 4 | 4 | 8 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 8.2 | 12.2 | 8.2 | 8.2 | 8.2 | 28.27586 | 27.72727 | 28.27586 | 28.27586 | 28.27586 |
| 1SV19EE016 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 10.4 | 15 | 10.4 | 10.4 | 10.4 | 35.86207 | 34.09091 | 35.86207 | 35.86207 | 35.86207 |
| 1SV19EE017 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 6.5 | 6.5 | 13 | 2 | 2 | 2 | 2 | 2 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 15.3 | 21.8 | 15.3 | 15.3 | 15.3 | 52.75862 | 49.54545 | 52.75862 | 52.75862 | 52.75862 |
| 1SV19EE020 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 12.6 | 18.4 | 12.6 | 12.6 | 12.6 | 43.44828 | 41.81818 | 43.44828 | 43.44828 | 43.44828 |
| 1SV20EE400 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 12.1 | 17.6 | 12.1 | 12.1 | 12.1 | 41.72414 | 40 | 41.72414 | 41.72414 | 41.72414 |
| 1SV20EE401 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.8 | 17.4 | 11.8 | 11.8 | 11.8 | 40.68966 | 39.54545 | 40.68966 | 40.68966 | 40.68966 |
| 1SV20EE402 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.7 | 17.2 | 11.7 | 11.7 | 11.7 | 40.34483 | 39.09091 | 40.34483 | 40.34483 | 40.34483 |
| | | | | | | | | | | | | | | | | | | | | 11.79444 | 17.34118 | 11.87059 | 11.87059 | 11.89412 | 40.6705 | 39.41176 | 40.93306 | 40.93306 | 41.0142 |

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| | |
|---|---|
| SHRIDEVI | **SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY**<br>**SIRA ROAD, TUMKUR- 572 106.** |

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | OPERATIONAL AMPLIFIERS AND LINEAR IC'S | SUBJECT CODE | 18EE46 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Describe the characteristics of ideal and practical operational amplifier. |
| CO2 | Design filters and signal generators using linear ICs. |
| CO3 | Demonstrate the application of Linear ICs as comparators and rectifiers. |
| CO4 | Analyze voltage regulators for given specification using op-amp and IC voltage regulators. |
| CO5 | Summarize the basics of PLL and Timer. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | V.RAJESH KUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | | IV | SECTION | | EEE | | | | | |
| SUBJECT | OPERATIONAL AMPLIFIERS AND LINEAR IC'S | | | | SUBJECT CODE | | 18EE46 | | | | | |

CO & PO MAPPING

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| CO1 | 3 | | | | 2 | 2 | | | | | | 2 |
| CO2 | 3 | | | | 2 | 2 | | | | | | 2 |
| CO3 | 3 | | | | 2 | 2 | | | | | | 2 |
| CO4 | 3 | | | | 2 | 2 | | | | | | 2 |
| CO5 | 3 | | | | 2 | 2 | | | | | | 2 |
| AVERAGE | 3 | | | | 2 | 2 | | | | | | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.02 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 40.57 | 1.21 | | | | 0.8 | 0.8 | | | | | | 0.8 |
| CO2 | 39.14 | 1.18 | | | | 0.78 | 0.78 | | | | | | 0.78 |
| CO3 | 40.73 | 1.2 | | | | 0.81 | 0.81 | | | | | | 0.81 |
| CO4 | 40.73 | 1.2 | | | | 0.81 | 0.81 | | | | | | 0.81 |
| CO5 | 40.73 | 1.2 | | | | 0.81 | 0.81 | | | | | | 0.81 |
| AVERAGE | 40.38 | 1.19 | | | | 0.80 | 0.80 | | | | | | 0.80 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 0.89 |

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STAFF NAME :V RAJESH KUMAR

| Academic year | 2020-21 | | | SEM | 4 | | Total strength | | | 18 | | Subject | | | RATIONAL AMPLIFIERS AND LINEAR | | | | | Subject Code | 18EE46 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IA TEST 1(40M) | | | IA TEST 2(40) | | | IA TEST 3(40M) | | | ASSIGNEMENT / QUIZ(10 M) | | | | | SEE MARKS(60) | | | | | Total Cos ATTAINMENT | | | | | % of individual CO | | | | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1=12 | CO2 | CO3 | CO4 | CO5 | CO1=29 | CO2=44 | CO3=29 | CO4=29 | CO5=29 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV18EE001 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 11.4 | 17 | 11.4 | 11.4 | 11.4 | 39.31034 | 38.63636 | 39.31034 | 39.31034 | 39.31034 |
| 1SV19EE001 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 12.4 | 18.2 | 12.4 | 12.4 | 12.4 | 42.75862 | 41.36364 | 42.75862 | 42.75862 | 42.75862 |
| 1SV19EE002 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 10.7 | 16 | 10.7 | 10.7 | 10.7 | 36.89655 | 36.36364 | 36.89655 | 36.89655 | 36.89655 |
| 1SV19EE005 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 13.6 | 19.4 | 13.6 | 13.6 | 13.6 | 46.89655 | 44.09091 | 46.89655 | 46.89655 | 46.89655 |
| 1SV19EE006 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 4.5 | 4.5 | 9 | 2 | 2 | 2 | 2 | 2 | 3.6 | 3.6 | 3.6 | 3.6 | 3.6 | 10.1 | 14.6 | 10.1 | 10.1 | 10.1 | 34.82759 | 33.18182 | 34.82759 | 34.82759 | 34.82759 |
| 1SV19EE007 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 13.4 | 19 | 13.4 | 13.4 | 13.4 | 46.2069 | 43.18182 | 46.2069 | 46.2069 | 46.2069 |
| 1SV19EE008 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 4.6 | 4.6 | 9.2 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 10.4 | 15 | 10.4 | 10.4 | 10.4 | 35.86207 | 34.09091 | 35.86207 | 35.86207 | 35.86207 |
| 1SV19EE009 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 5.3 | 5.3 | 10.6 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 11.1 | 16.4 | 11.1 | 11.1 | 11.1 | 38.27586 | 37.27273 | 38.27586 | 38.27586 | 38.27586 |
| 1SV19EE011 | 6.6 | 6.6 | 13.2 | 6.6 | 6.6 | 13.2 | 6.6 | 6.6 | 13.2 | 2 | 2 | 2 | 2 | 2 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 14.4 | 21 | 14.4 | 14.4 | 14.4 | 49.65517 | 47.72727 | 49.65517 | 49.65517 | 49.65517 |
| 1SV19EE012 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 11.3 | 16.8 | 11.3 | 11.3 | 11.3 | 38.96552 | 38.18182 | 38.96552 | 38.96552 | 38.96552 |
| 1SV19EE013 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 5.8 | 5.8 | 11.6 | 2 | 2 | 2 | 2 | 2 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 11 | | | | | 37.93103 | | | | |
| 1SV19EE014 | 3.6 | 3.6 | 7.2 | 3.6 | 3.6 | 7.2 | 3.6 | 3.6 | 7.2 | 2 | 2 | 2 | 2 | 2 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 7.8 | 11.4 | 7.8 | 7.8 | 7.8 | 26.89655 | 25.90909 | 26.89655 | 26.89655 | 26.89655 |
| 1SV19EE016 | 5 | 5 | 10 | 5 | 5 | 10 | 5 | 5 | 10 | 2 | 2 | 2 | 2 | 2 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 10.8 | 15.8 | 10.8 | 10.8 | 10.8 | 37.24138 | 35.90909 | 37.24138 | 37.24138 | 37.24138 |
| 1SV19EE017 | 6.6 | 6.6 | 13.2 | 6.6 | 6.6 | 13.2 | 6.6 | 6.5 | 13.1 | 2 | 2 | 2 | 2 | 2 | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 15.4 | 22 | 15.4 | 15.4 | 15.3 | 53.10345 | 50 | 53.10345 | 53.10345 | 52.75862 |
| 1SV19EE020 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.8 | 11.4 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 12.4 | 18 | 12.4 | 12.4 | 12.6 | 42.75862 | 40.90909 | 42.75862 | 42.75862 | 43.44828 |
| 1SV20EE400 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 12.1 | 17.6 | 12.1 | 12.1 | 12.1 | 41.72414 | 40 | 41.72414 | 41.72414 | 41.72414 |
| 1SV20EE401 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 5.6 | 5.6 | 11.2 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.8 | 17.4 | 11.8 | 11.8 | 11.8 | 40.68966 | 39.54545 | 40.68966 | 40.68966 | 40.68966 |
| 1SV20EE402 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 5.5 | 5.5 | 11 | 2 | 2 | 2 | 2 | 2 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 11.7 | 17.2 | 11.7 | 11.7 | 11.7 | 40.34483 | 39.09091 | 40.34483 | 40.34483 | 40.34483 |
| | | | | | | | | | | | | | | | | | | | | 11.76667 | 17.22353 | 11.81176 | 11.81176 | 11.81765 | 40.57471 | 39.14439 | 40.73022 | 40.73022 | 40.75051 |

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# DEPARTMENT OF EEE

| SUBJECT | CONTROL SYSTEM | SUBJECT CODE | 18EE61 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Analyze and model electrical and mechanical system using analogous |
| CO2 | Formulate transfer functions using block diagram and signal flow graphs. |
| CO3 | Analyze the stability of control system, ability to determine transient and steady state time response. |
| CO4 | Illustrate the performance of a given system in time and frequency domains, stability analysis using Root locus and Bode plots |
| CO5 | Discuss stability analysis using Nyquist plots, Design controller and compensator for a given specification |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | TANUJA K S | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-2021 | | | | | |
| COURSE | B.E | SEMESTER | VI | SECTION | | | | | | | | |
| SUBJECT | CONTROL SYSTEMS | | | SUBJECT CODE | 18EE61 | | | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO2 | 3 | - | - | - | - | - | - | - | - | - | - | - |
| CO3 | 2 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO4 | 3 | 3 | 2 | - | - | - | - | - | - | - | - | - |
| CO5 | 2 | 2 | 3 | - | - | - | - | - | - | - | - | - |
| AVERAGE | 2.6 | 2.75 | 2.5 | - | - | - | - | - | - | - | - | - |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.65 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 50.98 | 1.52 | 1.52 | | | | | | | | | | |
| CO2 | 49.35 | 1.48 | | | | | | | | | | | |
| CO3 | 50.98 | 1.01 | 1.52 | | | | | | | | | | |
| CO4 | 31.89 | 0.95 | 0.95 | 0.63 | | | | | | | | | |
| CO5 | 49.67 | 0.99 | 0.99 | 1.49 | | | | | | | | | |
| AVERAGE | 46.574 | 1.18 | 1.25 | 0.56 | | | | | | | | | |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.33 |

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| SEM: VI, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | Total | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1(34) | CO2(34) | CO3(34) | CO4(54) | CO5(34) | CO1(34) | CO2(34) | CO3(34) | CO4(54) | CO5(34) |
| 1SV17EE006 | 12 | 11 | **23** | 12 | 12 | **24** | 12 | 13 | **25** | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | **27** | 19.4 | 18.4 | 19.4 | 19.4 | 20.4 | 0.57 | 0.54 | 0.57 | 0.36 | 0.60 |
| 1SV17EE012 | 10 | 6 | **16** | 10 | 8 | **18** | 10 | 7 | **17** | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | **25** | 17 | 13 | 17 | 15 | 14 | 0.50 | 0.38 | 0.50 | 0.28 | 0.41 |
| 1SV18EE002 | 9 | 3 | **12** | 11 | 0 | **11** | 14 | -1 | **13** | 2 | 2 | 2 | 2 | 2 | 10 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | **26** | 16.2 | 10.2 | 18.2 | 7.2 | 6.2 | 0.48 | 0.30 | 0.54 | 0.13 | 0.18 |
| 1SV18EE003 | 7 | 19 | **26** | 9 | 19 | **28** | 13 | 14 | **27** | 2 | 2 | 2 | 2 | 2 | 10 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | **26** | 14.2 | 26.2 | 16.2 | 26.2 | 21.2 | 0.42 | 0.77 | 0.48 | 0.49 | 0.62 |
| 1SV18EE004 | 8 | 16 | **24** | 7 | 18 | **25** | 10 | 16 | **26** | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | **27** | 15.4 | 23.4 | 14.4 | 25.4 | 23.4 | 0.45 | 0.69 | 0.42 | 0.47 | 0.69 |
| 1SV18EE005 | 11 | 14 | **25** | 8 | 16 | **24** | 11 | 15 | **26** | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | **23** | 17.6 | 20.6 | 14.6 | 22.6 | 21.6 | 0.52 | 0.61 | 0.43 | 0.42 | 0.64 |
| 1SV18EE006 | 14 | 9 | **23** | 12 | 10 | **22** | 10 | 11 | **21** | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | **32** | 22.4 | 17.4 | 20.4 | 18.4 | 19.4 | 0.66 | 0.51 | 0.60 | 0.34 | 0.57 |
| 1SV18EE007 | 12 | 0 | **12** | 13 | -2 | **11** | 9 | 4 | **13** | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | **19** | 17.8 | 5.8 | 18.8 | 3.8 | 9.8 | 0.52 | 0.17 | 0.55 | 0.07 | 0.29 |
| 1SV18EE008 | 11 | 15 | **26** | 14 | 11 | **25** | 7 | 20 | **27** | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | **24** | 17.8 | 21.8 | 20.8 | 17.8 | 26.8 | 0.52 | 0.64 | 0.61 | 0.33 | 0.79 |
| 1SV18EE009 | 10 | 3 | **13** | 12 | 3 | **15** | 8 | 4 | **12** | 2 | 2 | 2 | 2 | 2 | 10 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | **16** | 15.2 | 8.2 | 17.2 | 8.2 | 9.2 | 0.45 | 0.24 | 0.51 | 0.15 | 0.27 |
| 1SV18EE011 | 9 | 7 | **16** | 10 | 8 | **18** | 11 | 6 | **17** | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | **21** | 15.2 | 13.2 | 16.2 | 14.2 | 12.2 | 0.45 | 0.39 | 0.48 | 0.26 | 0.36 |
| 1SV18EE012 | 8 | 5 | **13** | 11 | 0 | **11** | 13 | -1 | **12** | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | **21** | 14.2 | 11.2 | 17.2 | 6.2 | 5.2 | 0.42 | 0.33 | 0.51 | 0.11 | 0.15 |
| 1SV19EE400 | 8 | 12 | **20** | 9 | 13 | **22** | 14 | 7 | **21** | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | **23** | 14.6 | 18.6 | 15.6 | 19.6 | 13.6 | 0.43 | 0.55 | 0.46 | 0.36 | 0.40 |
| 1SV19EE401 | 10 | 6 | **16** | 7 | 11 | **18** | 13 | 6 | **19** | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | **25** | 17 | 13 | 14 | 18 | 13 | 0.50 | 0.38 | 0.41 | 0.33 | 0.38 |
| 1SV19EE402 | 14 | 11 | **25** | 6 | 20 | **26** | 12 | 15 | **27** | 2 | 2 | 2 | 2 | 2 | 10 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | **22** | 20.4 | 17.4 | 12.4 | 26.4 | 21.4 | 0.60 | 0.51 | 0.36 | 0.49 | 0.63 |
| 1SV19EE403 | 12 | 14 | **26** | 12 | 13 | **25** | 10 | 17 | **27** | 2 | 2 | 2 | 2 | 2 | 10 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | **28** | 19.6 | 21.6 | 19.6 | 20.6 | 24.6 | 0.58 | 0.64 | 0.58 | 0.38 | 0.72 |
| 1SV19EE404 | 14 | 13 | **27** | 14 | 12 | **26** | 11 | 14 | **25** | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | **21** | 20.2 | 19.2 | 20.2 | 18.2 | 20.2 | 0.59 | 0.56 | 0.59 | 0.34 | 0.59 |
| 1SV19EE405 | 10 | 15 | **25** | 12 | 15 | **27** | 12 | 14 | **26** | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | **29** | 17.8 | 22.8 | 19.8 | 22.8 | 21.8 | 0.52 | 0.67 | 0.58 | 0.42 | 0.64 |
| TOTAL | 189 | 179 | 368 | 189 | 187 | 376 | 200 | 181 | 381 | 36 | 36 | 36 | 36 | 36 | 180 | 87 | 87 | 87 | 87 | 87 | 435 | 312 | 302 | 312 | 310 | 304 | 9.18 | 8.88 | 9.18 | 5.74 | 8.94 |
| otal student | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Avearge | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 10.5 | 50.98 | 49.35 | 50.98 | 31.89 | 49.67 |

18EE61 CS 2020-21

PRINCIPAL
SIET., TUMAKURU.

Head of the Department
Electrical & Electronics Engineering
Shridevi Institute of Engineering & Technology
TUMKUR-572106.

# DEPARTMENT OF EEE

| SUBJECT | POWER SYSTEM ANALYSIS 1 | SUBJECT CODE | 18EE62 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Model the power system components & construct per unit impedance diagram of power system. |
| CO2 | Analyze three phase symmetrical faults on power system. |
| CO3 | Compute unbalanced phasor in terms of sequence components and vice versa, also develop sequence networks. |
| CO4 | Analyze various unsymmetrical faults on power system. |
| CO5 | Examine dynamics of synchronous machine and determine the power system stability |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | UMABAI | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-2021 | | | | | |
| COURSE | B.E | SEMESTER | VI | SECTION | | | | | | | | |
| SUBJECT | POWER SYSTEM ANALYSIS 1 | | | SUBJECT CODE | 18EE62 | | | | | | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 3 | 3 | - | - | - | - | 1 | - | - | - | - | - |
| CO2 | 3 | 3 | - | - | - | - | 1 | - | - | - | - | - |
| CO3 | 2 | 3 | - | - | - | 1 | - | - | - | - | - | - |
| CO4 | 2 | 3 | - | 3 | - | 1 | - | - | 1 | - | - | 2 |
| CO5 | 2 | 3 | - | 3 | - | 1 | 1 | - | 1 | - | - | 2 |
| AVERAGE | 2.4 | 3 | - | 3 | - | 1 | 1 | - | 1 | - | - | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 1.92 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 61.7 | 1.851 | 1.851 | | | | | | | | | | |
| CO2 | 52.4 | 1.572 | 1.572 | | | | | 0.524 | | | | | |
| CO3 | 62.0 | 1.24 | 1.86 | | 1.86 | | 0.62 | | | | | | |
| CO4 | 57.5 | 1.15 | 1.725 | | 1.725 | | 0.575 | | | 0.575 | | | 1.15 |
| CO5 | 60.9 | 1.21 | 1.82 | | 1.82 | | 0.609 | 0.609 | | 0.609 | | | 1.21 |
| AVERAGE | 58.9 | 1.40 | 1.76 | | 1.8 | | 0.601 | 0.566 | | 0.592 | | | 1.18 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.047 |

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| SEM: VI, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | TOTAL | | | | | AVERAGE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1SV17EE006 | 11 | 15 | 26 | 11 | 14 | 25 | 11 | 16 | 27 | 4 | 4 | 4 | 4 | 4 | 20 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 20.4 | 24.4 | 20.4 | 34.4 | 25.40 | 0.60 | 0.72 | 0.60 | 0.64 | 0.75 |
| 1SV17EE012 | 12 | 4 | 16 | 12 | 6 | 18 | 12 | 5 | 17 | 4 | 4 | 4 | 4 | 4 | 20 | 5 | 5 | 5 | 5 | 5 | 25 | 21 | 13 | 21 | 27 | 14.00 | 0.62 | 0.38 | 0.62 | 0.50 | 0.41 |
| 1SV18EE002 | 13 | 5 | 18 | 13 | 7 | 20 | 13 | 6 | 19 | 4 | 4 | 4 | 4 | 4 | 20 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 22.2 | 14.2 | 22.2 | 29.2 | 15.20 | 0.65 | 0.42 | 0.65 | 0.54 | 0.45 |
| 1SV18EE003 | 12 | 15 | 27 | 14 | 10 | 24 | 14 | 13 | 27 | 4 | 4 | 4 | 4 | 4 | 20 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 21.2 | 24.2 | 23.2 | 33.2 | 22.20 | 0.62 | 0.71 | 0.68 | 0.61 | 0.65 |
| 1SV18EE004 | 14 | 4 | 18 | 15 | 5 | 20 | 12 | 13 | 25 | 4 | 4 | 4 | 4 | 4 | 20 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 23.4 | 13.4 | 24.4 | 26.4 | 22.40 | 0.69 | 0.39 | 0.72 | 0.49 | 0.66 |
| 1SV18EE005 | 12 | 12 | 24 | 12 | 18 | 30 | 13 | 17 | 30 | 4 | 4 | 4 | 4 | 4 | 20 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 20.6 | 20.6 | 20.6 | 39.6 | 25.60 | 0.61 | 0.61 | 0.61 | 0.73 | 0.75 |
| 1SV18EE006 | 13 | 11 | 24 | 13 | 14 | 27 | 14 | 13 | 27 | 4 | 4 | 4 | 4 | 4 | 20 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 23.4 | 21.4 | 23.4 | 38.4 | 23.40 | 0.69 | 0.63 | 0.69 | 0.71 | 0.69 |
| 1SV18EE007 | 14 | -5 | 9 | 14 | -2 | 12 | 12 | 3 | 15 | 4 | 4 | 4 | 4 | 4 | 20 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 21.8 | 2.8 | 21.8 | 17.8 | 10.80 | 0.64 | 0.08 | 0.64 | 0.33 | 0.32 |
| 1SV18EE008 | 12 | 13 | 25 | 12 | 12 | 24 | 10 | 19 | 29 | 4 | 4 | 4 | 4 | 4 | 20 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 20.8 | 21.8 | 20.8 | 30.8 | 27.80 | 0.61 | 0.64 | 0.61 | 0.57 | 0.82 |
| 1SV18EE009 | 12 | 0 | 12 | 10 | 7 | 17 | 10 | 9 | 19 | 4 | 4 | 4 | 4 | 4 | 20 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 16 | 19.2 | 7.2 | 17.2 | 24.2 | 16.20 | 0.56 | 0.21 | 0.51 | 0.45 | 0.48 |
| 1SV18EE011 | 13 | 11 | 24 | 12 | 8 | 20 | 12 | 13 | 25 | 4 | 4 | 4 | 4 | 4 | 20 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 21.8 | 19.8 | 20.8 | 28.8 | 21.80 | 0.64 | 0.58 | 0.61 | 0.53 | 0.64 |
| 1SV18EE012 | 12 | -4 | 8 | 13 | -1 | 12 | 13 | -3 | 10 | 4 | 4 | 4 | 4 | 4 | 20 | 2.8 | 2.8 | 2.8 | 2.8 | 2.8 | 14 | 18.8 | 2.8 | 19.8 | 18.8 | 3.80 | 0.55 | 0.08 | 0.58 | 0.35 | 0.11 |
| 1SV19EE400 | 10 | 20 | 30 | 14 | 16 | 30 | 10 | 20 | 30 | 4 | 4 | 4 | 4 | 4 | 20 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 18.6 | 28.6 | 22.6 | 34.6 | 28.60 | 0.55 | 0.84 | 0.66 | 0.64 | 0.84 |
| 1SV19EE401 | 10 | 8 | 18 | 12 | 8 | 20 | 12 | 13 | 25 | 4 | 4 | 4 | 4 | 4 | 20 | 5 | 5 | 5 | 5 | 5 | 25 | 19 | 17 | 21 | 29 | 22.00 | 0.56 | 0.50 | 0.62 | 0.54 | 0.65 |
| 1SV19EE402 | 11 | 19 | 30 | 10 | 14 | 24 | 13 | 17 | 30 | 4 | 4 | 4 | 4 | 4 | 20 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 20.8 | 28.8 | 19.8 | 36.8 | 26.80 | 0.61 | 0.85 | 0.58 | 0.68 | 0.79 |
| 1SV19EE403 | 12 | 12 | 24 | 10 | 15 | 25 | 12 | 17 | 29 | 4 | 4 | 4 | 4 | 4 | 20 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 21.6 | 21.6 | 19.6 | 36.6 | 26.60 | 0.64 | 0.64 | 0.58 | 0.68 | 0.78 |
| 1SV19EE404 | 12 | 8 | 20 | 12 | 13 | 25 | 13 | 11 | 24 | 4 | 4 | 4 | 4 | 4 | 20 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 20.2 | 16.2 | 20.2 | 34.2 | 19.20 | 0.59 | 0.48 | 0.59 | 0.63 | 0.56 |
| 1SV19EE405 | 13 | 13 | 26 | 11 | 16 | 27 | 14 | 11 | 25 | 4 | 4 | 4 | 4 | 4 | 20 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 22.8 | 22.8 | 20.8 | 39.8 | 20.80 | 0.67 | 0.67 | 0.61 | 0.74 | 0.61 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | 218 | 161 | 379 | 220 | 180 | 400 | 220 | 213 | 433 | 72 | 72 | 72 | 72 | 72 | 360 | 87.6 | 88 | 87.6 | 87.6 | 87.6 | 438 | 378 | 321 | 379.6 | 559.6 | 372.6 | 11.11 | 9.429 | 11.16 | 10.363 | 10.958824 |
| Total students | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Average | 12.1 | 8.94 | 21.056 | 12.22 | 10 | 22.222 | 12.2 | 11.8 | 24.056 | 4 | 4 | 4 | 4 | 4 | 20 | 4.87 | 4.9 | 4.87 | 4.87 | 4.87 | 24.33 | 21 | 17.8 | 21.09 | 31.09 | 20.7 | 61.7 | 52.39 | 62.03 | 57.572 | 60.882353 |

**POWER SYSTEM 18EE62**
**2020-21**

Head of the Department
Electrical & Electronics Engineering
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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

| SUBJECT | DIGITAL SIGNAL PROCESSING | SUBJECT CODE | 18EE63 |
|---|---|---|---|

**COURSE OUTCOME**

**CO1:** Apply DFT and IDFT to perform linear filtering techniques on given sequences to determine the output.
**CO2:** Apply fast and efficient algorithms for computing DFT and inverse DFT of a given sequence
**CO3:** Design and realize infinite impulse response Butterworth and Chebyshev digital filters using impulse invariant and bilinear transformation techniques
**CO4:** Develop a digital IIR filter by direct, cascade, parallel, ladder and FIR filter by direct, cascade and linear phase methods of realization
**CO5:** Design and realize FIR filters by use of window function and frequency sampling method

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.
**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.
**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.
**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.
**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.
**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.
**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.
**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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Shridevi Institute of Engineering & Technology
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PRINCIPAL
SIET., TUMAKURU.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | Mr. G. H. RAVIKUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | 2020-21 | | | | | | |
| COURSE | B.E | SEMESTER | VI | SECTION | EEE | | | | | | | |
| SUBJECT | DIGITAL SIGNAL PROCESSING | | | SUBJECT CODE | 18EE63 | | | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - |
| CO2 | 3 | 2 | 2 | - | - | - | - | - | - | - | - | - |
| CO3 | 3 | 2 | 2 | - | 2 | - | - | - | - | - | - | - |
| CO4 | 3 | 2 | 2 | - | 2 | - | - | - | - | - | - | - |
| CO5 | 2 | 3 | - | - | 2 | - | - | - | - | - | - | - |
| AVERAGE | 2.6 | 2.4 | 2 | - | 2 | - | - | - | - | - | - | - |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.25 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 64.41 | 1.288 | 1.932 | - | - | - | - | - | - | - | - | - | - |
| CO2 | 53.82 | 1.614 | 1.076 | 1.076 | - | - | - | - | - | - | - | - | - |
| CO3 | 64.4 | 1.932 | 1.288 | 1.288 | - | 1.288 | - | - | - | - | - | - | - |
| CO4 | 64.41 | 1.932 | 1.288 | 1.288 | - | 1.288 | - | - | - | - | - | - | - |
| CO5 | 56.17 | 1.123 | 1.685 | - | - | 1.123 | - | - | - | - | - | - | - |
| AVERAGE | | 1.577 | 1.453 | 1.217 | - | 1.233 | - | - | - | - | - | - | - |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.37 |

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PRINCIPAL
SIET., TUMAKURU

2020-21

| SEM | VI | | Total strength | | 18 | DIGITAL SIGNAL PROCESSING | | | Subject Code | 18EE63 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:VI | IA TEST 1 (30M) | | | IA TEST 2 (30M) | | | IA TEST 3 (30M) | | | SIGNEMENT(10) + Grace (10 | | | | | SEE MARKS(50M) | | | | | Total Cos ATTAINMENT | | | | | Avg of individual CO | | | | | SEE (50M) | |
| USN | CO1 | CO2 | TOTAL | CO2 | CO3 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 | CO1(29 | CO2(44) | CO3(29 | CO4(29 | CO5(29 | CO1 | CO2 | CO3 | CO4 | CO5 | | |
| 1SV17EE006 | 10 | 5 | 15 | 5 | 10 | 15 | 10 | 5 | 15 | 4 | 4 | 4 | 4 | 4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 19.4 | 19.4 | 19.4 | 19.4 | 14.4 | 66.90 | 44.09 | 66.9 | 66.90 | 49.66 | 27 | 5.4 |
| 1SV17EE012 | 10 | 8 | 18 | 8 | 10 | 18 | 10 | 8 | 18 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 19 | 25 | 19 | 19 | 17 | 65.52 | 56.82 | 65.5 | 65.52 | 58.62 | 25 | 5 |
| 1SV18EE002 | 10 | 2 | 12 | 2 | 10 | 12 | 10 | 2 | 12 | 4 | 4 | 4 | 4 | 4 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 19.2 | 13.2 | 19.2 | 19.2 | 11.2 | 66.21 | 30.00 | 66.2 | 66.21 | 38.62 | 26 | 5.2 |
| 1SV18EE003 | 11 | 10 | 21 | 10 | 11 | 21 | 11 | 10 | 21 | 4 | 4 | 4 | 4 | 4 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 20.2 | 29.2 | 20.2 | 20.2 | 19.2 | 69.66 | 66.36 | 69.7 | 69.66 | 66.21 | 26 | 5.2 |
| 1SV18EE004 | 7 | 6 | 13 | 6 | 7 | 13 | 7 | 6 | 13 | 4 | 4 | 4 | 4 | 4 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 16.4 | 21.4 | 16.4 | 16.4 | 15.4 | 56.55 | 48.64 | 56.6 | 56.55 | 53.1 | 27 | 5.4 |
| 1SV18EE005 | 12 | 8 | 20 | 8 | 12 | 20 | 12 | 8 | 20 | 4 | 4 | 4 | 4 | 4 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 20.6 | 24.6 | 20.6 | 20.6 | 16.6 | 71.03 | 55.91 | 71 | 71.03 | 57.24 | 23 | 4.6 |
| 1SV18EE006 | 10 | 8 | 18 | 8 | 10 | 18 | 10 | 8 | 18 | 4 | 4 | 4 | 4 | 4 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 20.4 | 26.4 | 20.4 | 20.4 | 18.4 | 70.34 | 60.00 | 70.3 | 70.34 | 63.45 | 32 | 6.4 |
| 1SV18EE007 | 6 | 7 | 13 | 7 | 6 | 13 | 6 | 7 | 13 | 4 | 4 | 4 | 4 | 4 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 13.8 | 21.8 | 13.8 | 13.8 | 14.8 | 47.59 | 49.55 | 47.6 | 47.59 | 51.03 | 19 | 3.8 |
| 1SV18EE008 | 8 | 10 | 18 | 10 | 8 | 18 | 8 | 10 | 18 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 16.8 | 28.8 | 16.8 | 16.8 | 18.8 | 57.93 | 65.45 | 57.9 | 57.93 | 64.83 | 24 | 4.8 |
| 1SV18EE009 | 6 | 6 | 12 | 6 | 6 | 12 | 6 | 6 | 12 | 4 | 4 | 4 | 4 | 4 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 13.2 | 19.2 | 13.2 | 13.2 | 13.2 | 45.52 | 43.64 | 45.5 | 45.52 | 45.52 | 16 | 3.2 |
| 1SV18EE011 | 9 | 8 | 17 | 8 | 9 | 17 | 9 | 8 | 17 | 4 | 4 | 4 | 4 | 4 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 17.8 | 24.8 | 17.8 | 17.8 | 16.8 | 61.38 | 56.36 | 61.4 | 61.38 | 57.93 | 24 | 4.8 |
| 1SV18EE012 | 8 | 7 | 15 | 7 | 8 | 15 | 8 | 7 | 15 | 4 | 4 | 4 | 4 | 4 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 15.4 | 21.4 | 15.4 | 15.4 | 14.4 | 53.10 | 48.64 | 53.1 | 53.10 | 49.66 | 17 | 3.4 |
| 1SV19EE400 | 10 | 13 | 23 | 13 | 10 | 23 | 10 | 13 | 23 | 4 | 4 | 4 | 4 | 4 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 18.6 | 34.6 | 18.6 | 18.6 | 21.6 | 64.14 | 78.64 | 64.1 | 64.14 | 74.48 | 23 | 4.6 |
| 1SV19EE401 | 8 | 8 | 16 | 8 | 8 | 16 | 8 | 8 | 16 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 17 | 25 | 17 | 17 | 17 | 58.62 | 56.82 | 58.6 | 58.62 | 58.62 | 25 | 5 |
| 1SV19EE402 | 10 | 7 | 17 | 7 | 10 | 17 | 10 | 7 | 17 | 4 | 4 | 4 | 4 | 4 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 19.8 | 23.8 | 19.8 | 19.8 | 16.8 | 68.28 | 54.09 | 68.3 | 68.28 | 57.93 | 29 | 5.8 |
| 1SV19EE403 | 15 | 5 | 20 | 5 | 15 | 20 | 15 | 5 | 20 | 4 | 4 | 4 | 4 | 4 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 24.6 | 19.6 | 24.6 | 24.6 | 14.6 | 84.83 | 44.55 | 84.8 | 84.83 | 50.34 | 28 | 5.6 |
| 1SV19EE404 | 15 | 7 | 22 | 7 | 15 | 22 | 15 | 7 | 22 | 4 | 4 | 4 | 4 | 4 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 23.2 | 22.2 | 23.2 | 23.2 | 15.2 | 80.00 | 50.45 | 80 | 80.00 | 52.41 | 21 | 4.2 |
| 1SV19EE405 | 11 | 8 | 19 | 8 | 11 | 19 | 11 | 8 | 19 | 4 | 4 | 4 | 4 | 4 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 20.8 | 25.8 | 20.8 | 20.8 | 17.8 | 71.72 | 58.64 | 71.7 | 71.72 | 61.38 | 29 | 5.8 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 64.41 | 53.81 | 64.4 | 64.41 | 56.17 | 22.69 | |

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Head of the Department
Electrical & Electronics E
Shridevi

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SIET, TUMAKURU.

# DEPARTMENT OF EEE

| SUBJECT | NON COVENTIAL ENERGY RESOURCES | SUBJECT CODE | 18ME651 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Describe the environmental aspects of non-conventional energy resources. In Comparison with various conventional energy systems, their prospects and limitations. |
| CO2 | Know the need of renewable energy resources, historical and latest developments |
| CO3 | Describe the use of solar energy and the various components used in the energy production with respect to applications like-heating, cooling, desalination, power generation, drying, cooking etc. |
| CO4 | Appreciate the need of Wind Energy and the various components used in energy generation and know the classifications. |
| CO5 | Understand the concept of Biomass energy resources and their classification, types of biogas Plants-applications |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | THIPPESWAMY J C | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-2021 | | |
| COURSE | B.E | SEMESTER | IV | SECTION | EEE |
| SUBJECT | NON CONVENTIAL ENERGY RESOURCE | | SUBJECT CODE | 18ME651 | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | - | - | - | - | - | 1 | 3 | - | - | - | - | 2 |
| CO2 | - | 3 | - | - | - | 1 | 2 | - | - | - | - | 2 |
| CO3 | - | - | - | - | 3 | 1 | 3 | - | - | - | - | 2 |
| CO4 | - | - | - | - | 3 | 1 | 3 | - | - | - | - | 2 |
| CO5 | - | - | - | - | - | 1 | 3 | - | - | - | - | 2 |
| AVERAGE | - | 3 | - | - | 3 | 1 | 2.57 | - | - | - | - | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 51 | - | - | - | - | - | 0.51 | 1.53 | - | - | - | - | 0.20 |
| CO2 | 54 | - | 1.62 | - | - | - | 0.54 | 1.08 | - | - | - | - | 1.08 |
| CO3 | 55 | - | - | - | - | 1.65 | 0.55 | 1.65 | - | - | - | - | 1.1 |
| CO4 | 33 | - | - | - | - | 0.99 | 0.33 | 0.99 | - | - | - | - | 0.66 |
| CO5 | 53 | - | - | - | - | - | 0.53 | 1.59 | - | - | - | - | 1.06 |
| AVERAGE | 49.2 | - | 1.62 | - | - | 1.32 | 0.49 | 1.36 | - | - | - | - | 0.82 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.12 |

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| SEM,VI,EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | Total | | | | | AVERAGE | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1(34) | CO2 | CO3 | CO4 | CO5 | CO1(34) | CO2(34 | CO3(34) | CO4(54) | CO5(34) |
| 1SV17EE006 | 14 | 12 | 26 | 13 | 12 | 25 | 12 | 15 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 3.4 | 3.4 | 3.4 | 3.4 | 3.4 | 27 | 19.4 | 17.4 | 18.4 | 17.4 | 20.4 | 0.57 | 0.51 | 0.54 | 0.32 | 0.60 |
| 1SV17EE012 | 12 | 7 | 19 | 4 | 11 | 15 | 11 | 6 | 17 | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | 25 | 19 | 14 | 11 | 18 | 13 | 0.56 | 0.41 | 0.32 | 0.33 | 0.38 |
| 1SV18EE002 | 9 | 11 | 20 | 8 | 10 | 18 | 10 | 9 | 19 | 2 | 2 | 2 | 2 | 2 | 10 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 16.2 | 18.2 | 15.2 | 17.2 | 16.2 | 0.48 | 0.54 | 0.45 | 0.32 | 0.48 |
| 1SV18EE003 | 8 | 18 | 26 | 16 | 11 | 27 | 14 | 11 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 5.2 | 5.2 | 5.2 | 5.2 | 5.2 | 26 | 15.2 | 25.2 | 23.2 | 21.2 | 18.2 | 0.45 | 0.74 | 0.68 | 0.39 | 0.54 |
| 1SV18EE004 | 10 | 10 | 20 | 8 | 14 | 22 | 13 | 8 | 21 | 2 | 2 | 2 | 2 | 2 | 10 | 5.4 | 5.4 | 5.4 | 5.4 | 5.4 | 27 | 17.4 | 17.4 | 15.4 | 20.4 | 15.4 | 0.51 | 0.51 | 0.45 | 0.38 | 0.45 |
| 1SV18EE005 | 11 | 18 | 29 | 17 | 10 | 27 | 9 | 19 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 17.6 | 24.6 | 23.6 | 15.6 | 25.6 | 0.52 | 0.72 | 0.69 | 0.29 | 0.75 |
| 1SV18EE006 | 12 | 15 | 27 | 19 | 9 | 28 | 8 | 18 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 20.4 | 23.4 | 27.4 | 16.4 | 26.4 | 0.60 | 0.69 | 0.81 | 0.30 | 0.78 |
| 1SV18EE007 | 14 | -4 | 10 | 3 | 8 | 11 | 9 | 3 | 12 | 2 | 2 | 2 | 2 | 2 | 10 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 19 | 19.8 | 1.8 | 8.8 | 14.8 | 8.8 | 0.58 | 0.05 | 0.26 | 0.27 | 0.26 |
| 1SV18EE008 | 12 | 15 | 27 | 19 | 7 | 26 | 11 | 14 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 18.8 | 21.8 | 25.8 | 17.8 | 20.8 | 0.55 | 0.64 | 0.76 | 0.33 | 0.61 |
| 1SV18EE009 | 11 | 5 | 16 | 13 | 5 | 18 | 12 | 2 | 14 | 2 | 2 | 2 | 2 | 2 | 10 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | 16 | 16.2 | 10.2 | 18.2 | 17.2 | 7.2 | 0.48 | 0.30 | 0.54 | 0.32 | 0.21 |
| 1SV18EE011 | 12 | 9 | 21 | 15 | 10 | 25 | 14 | 9 | 23 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 15.2 | 21.2 | 20.2 | 15.2 | 0.54 | 0.45 | 0.62 | 0.37 | 0.45 |
| 1SV18EE012 | 10 | 1 | 11 | -2 | 12 | 10 | 10 | -1 | 9 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 16.2 | 7.2 | 4.2 | 16.2 | 5.2 | 0.48 | 0.21 | 0.12 | 0.30 | 0.15 |
| 1SV19EE400 | 9 | 20 | 29 | 16 | 14 | 30 | 12 | 16 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 15.6 | 26.6 | 22.6 | 18.6 | 22.6 | 0.46 | 0.78 | 0.66 | 0.34 | 0.66 |
| 1SV19EE401 | 8 | 12 | 20 | 7 | 12 | 19 | 11 | 10 | 21 | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | 25 | 15 | 19 | 14 | 18 | 17 | 0.44 | 0.56 | 0.41 | 0.33 | 0.50 |
| 1SV19EE402 | 7 | 22 | 29 | 16 | 11 | 27 | 10 | 18 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 24 | 13.8 | 28.8 | 22.8 | 16.8 | 24.8 | 0.41 | 0.85 | 0.67 | 0.31 | 0.73 |
| 1SV19EE403 | 10 | 14 | 24 | 16 | 10 | 26 | 12 | 16 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 17.6 | 21.6 | 23.6 | 19.6 | 23.6 | 0.52 | 0.64 | 0.69 | 0.36 | 0.69 |
| 1SV19EE404 | 12 | 9 | 21 | 13 | 11 | 24 | 10 | 13 | 23 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 15.2 | 19.2 | 16.2 | 19.2 | 0.54 | 0.45 | 0.56 | 0.30 | 0.56 |
| 1SV19EE405 | 12 | 15 | 27 | 16 | 12 | 28 | 12 | 14 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 5.8 | 5.8 | 5.8 | 5.8 | 5.8 | 29 | 19.8 | 22.8 | 23.8 | 19.8 | 21.8 | 0.58 | 0.67 | 0.70 | 0.37 | 0.64 |
| TOTAL | 193 | 209 | 402 | 217 | 189 | 406 | 200 | 200 | 400 | 36 | 36 | 36 | 36 | 36 | 180 | 85.4 | 85.4 | 85.4 | 85.4 | 85.4 | 437 | 314.4 | 330.4 | 338.4 | 321.4 | 321.4 | 9.2471 | 9.718 | 9.952941 | 5.951852 | 9.452941 |
| Total students | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 | 18 |
| Avearge | 11 | 12 | 22 | 12 | 11 | 23 | 11 | 11 | 22 | 2 | 2 | 2 | 2 | 2 | 10 | 5 | 5 | 5 | 5 | 5 | 24 | 17 | 18 | 19 | 18 | 18 | 51 | 54 | 55 | 33 | 53 |

18ME651 NCES 2020-21

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| | |
|---|---|
| SHRIDEVI | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY<br>SIRA ROAD, TUMKUR- 572 106. |

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGG

| SUBJECT | POWER SYSTEM OPERATION & CONTROL | SUBJECT CODE | 17EE81 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| CO1 | Describe various levels of controls in power systems, architecture and configuration of SCADA. |
| CO2 | Develop and analyze mathematical models of Automatic Load Frequency Control. |
| CO3 | Develop mathematical model of Automatic Generation Control in Interconnected Power system |
| CO4 | Discuss the Control of Voltage , Reactive Power and Voltage collapse. |
| CO5 | Explain security, contingency analysis, state estimation of power systems. |

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | |
|---|---|---|---|---|---|
| FACULTY NAME | RAJESH KUMAR V | | | | |
| BRANCH | EEE | ACADEMIC YEAR | 2020-21 | | |
| COURSE | B.E | SEMESTER | V | SECTION | EEE |
| SUBJECT | POWER SYSTEM OPERATION & CONTROL | SUBJECT CODE | 17EE81 | | |

**CO & PO MAPPING**

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **CO1** | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 |
| **CO2** | 2 | 3 | 2 | - | - | - | - | - | - | - | - | 1 |
| **CO3** | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 |
| **CO4** | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 |
| **CO5** | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 |
| **AVERAGE** | 2 | 3 | - | - | - | - | - | - | - | - | - | 1 |
| | | | | | | | | | | | **OVERALL MAPPING OF SUBJECT** | 2 |

**CO AND PO ATTAINMENT**

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CO1** | 64.83 | **1.29** | **1.94** | | | | | | | | | | **0.64** |
| **CO2** | 82.07 | **1.64** | **2.46** | | | | | | | | | | **0.82** |
| **CO3** | 65.69 | **1.31** | **1.97** | | | | | | | | | | **0.65** |
| **CO4** | **42.73** | **0.85** | **1.28** | | | | | | | | | | **0.42** |
| **CO5** | 85.95 | **1.71** | **2.57** | | | | | | | | | | **0.85** |
| **AVERAGE** | **68.25** | **1.36** | **2.04** | | | | | | | | | | **0.67** |
| | | | | | | | | | | | | **FINAL ATTAINMENT LEVEL** | **1.35** |

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| SEM: VII, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE mapping | | | | | | TOTAL | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1tv17EE002 | 12 | 13 | 25 | 10 | 14 | 24 | 10 | 16 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 20.4 | 21.4 | 18.4 | 18.4 | 24.4 | 0.703 | 0.738 | 0.634 | 0.418 | 0.841 |
| 1tv17EE004 | 11 | 15 | 26 | 12 | 18 | 30 | 11 | 17 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 18.2 | 22.2 | 19.2 | 18.2 | 24.2 | 0.628 | 0.766 | 0.662 | 0.414 | 0.834 |
| 1tv17EE005 | 9 | 19 | 28 | 14 | 15 | 29 | 12 | 17 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 18.2 | 28.2 | 23.2 | 21.2 | 26.2 | 0.628 | 0.972 | 0.800 | 0.482 | 0.903 |
| 1tv17EE009 | 7 | 19 | 26 | 9 | 19 | 28 | 13 | 14 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 8 | 8 | 8 | 8 | 8 | 40 | 17 | 29 | 19 | 23 | 24 | 0.586 | 1.000 | 0.655 | 0.523 | 0.828 |
| 1tv17EE010 | 11 | 13 | 24 | 7 | 15 | 22 | 10 | 16 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 5.6 | 5.6 | 5.6 | 5.6 | 5.6 | 28 | 18.6 | 20.6 | 14.6 | 17.6 | 23.6 | 0.641 | 0.710 | 0.503 | 0.400 | 0.814 |
| 1tv18EE400 | 12 | 15 | 27 | 13 | 12 | 25 | 9 | 16 | 25 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 20.4 | 23.4 | 19.4 | 17.4 | 24.4 | 0.703 | 0.807 | 0.669 | 0.395 | 0.841 |
| 1tv18EE402 | 12 | 14 | 26 | 12 | 12 | 24 | 9 | 19 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.2 | 21 | 18.2 | 20.2 | 18.2 | 15.2 | 25.2 | 0.628 | 0.697 | 0.628 | 0.345 | 0.869 |
| 1tv18EE405 | 10 | 16 | 26 | 11 | 13 | 24 | 10 | 18 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 37 | 19.4 | 25.4 | 20.4 | 19.4 | 27.4 | 0.669 | 0.876 | 0.703 | 0.441 | 0.945 |
| TOTAL | 84 | 124 | 208 | 86 | 118 | 204 | 84 | 133 | 217 | 16 | 16 | 16 | 16 | 16 | 80 | 50.4 | 50.4 | 50.4 | 50.4 | 50.4 | 252 | 150.4 | 190.4 | 152.4 | 150.4 | 199.4 | 5.186207 | 6.565517 | 5.255172 | 3.418182 | 6.875862 |
| Total students | 8 | 8 | 8 | 5 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Average | 10.5 | 15.5 | 26 | 10.75 | 14.75 | 25.5 | 10.5 | 16.63 | 27.1 | 2 | 2 | 2 | 2 | 2 | 10 | 6.3 | 6.3 | 6.3 | 6.3 | 6.3 | 31.5 | 18.8 | 23.8 | 19.05 | 18.8 | 24.925 | 64.83 | 82.07 | 65.69 | 42.73 | 85.95 |



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# SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

## SIRA ROAD, TUMKUR- 572 106.

## DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

| SUBJECT | INDUSTRIAL DRIVES & APPLICATIONS | SUBJECT CODE | 17EE82 |
|---|---|---|---|

**COURSE OUTCOME**

**CO1:** Explain the advantages, choice and control of electric drive
**CO2:** Explain the dynamics, generating and motoring modes of operation of electric drives
**CO3:** Explain the selection of motor power rating to suit industry requirements
**CO4:** Analyze the performance & control of DC motor drives using controlled rectifiers
**CO5:** Analyze the performance & control of converter fed Induction motor, synchronous motor & stepper motor drives

**PROGRAM OUTCOMES**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.
**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.
**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.
**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.
**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.
**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.
**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.
**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

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| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | Mr. G. H. RAVIKUMAR | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | VIII | SECTION | EEE | | | | | | | |
| SUBJECT | INDUSTRIAL DRIVES & APPLICATIONS | | | | | SUBJECT CODE | 17EE82 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | - | - | - | - | - | - | - | - | - | - | 2 |
| CO2 | 2 | 3 | - | - | - | - | - | - | - | - | - | 2 |
| CO3 | 2 | 3 | - | - | - | - | - | - | - | - | - | 2 |
| CO4 | 2 | 3 | - | - | - | - | - | - | - | - | - | 2 |
| CO5 | 2 | 2 | - | - | - | - | - | - | - | - | - | 2 |
| AVERAGE | 2 | 2.75 | - | - | - | - | - | - | - | - | - | 2 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | 2.25 |

CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 73.71 | 1.474 | - | - | - | - | - | - | - | - | - | - | 1.474 |
| CO2 | 72.4 | 1.448 | 2.172 | - | - | - | - | - | - | - | - | - | 1.488 |
| CO3 | 77.6 | 1.552 | 2.328 | - | - | - | - | - | - | - | - | - | 1.552 |
| CO4 | 73.3 | 1.466 | 2.199 | - | - | - | - | - | - | - | - | - | 1.466 |
| CO5 | 73.59 | 1.471 | 1.471 | - | - | - | - | - | - | - | - | - | 1.471 |
| AVERAGE | | 1.482 | 2.042 | - | - | - | - | - | - | - | - | - | 1.49 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 1.671 |

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| SEM :VIII | IA TEST 1 (30M | | Total strength | | 8 | | | RIAL DRIVES & APPLIC | | | | | Subject Code | | 17EE82 | | | | | | | 2020-21 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEM:VIII | IA TEST 1 (30M) | | | IA TEST 2 (30M) | | | IA TEST 3 (30M) | | | ASSIGNEMENT(10) | | | | | SEE MARKS(60M) | | | | | Total Cos ATTAINMENT | | | | | Avg of individual CO | | | | | SEE (60M) | |
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 | CO1(29 | CO2(29) | CO3(29 | CO4(44 | CO5(29) | CO1 | CO2 | CO3 | CO4 | CO5 | | |
| 1SV17EE002 | 12 | 12 | 24 | 15 | 9 | 24 | 9 | 15 | 24 | 2 | 2 | 2 | 2 | 2 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 21.4 | 21.4 | 24.4 | 27.4 | 24.4 | 73.8 | 73.8 | 84.1 | 62.3 | 84.1 | 37 | 7.4 |
| 1SV17EE004 | 14 | 14 | 28 | 15 | 13 | 28 | 13 | 15 | 28 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 22 | 22 | 23 | 34 | 23 | 75.9 | 75.9 | 79.3 | 77.3 | 79.3 | 30 | 6 |
| 1SV17EE005 | 15 | 14 | 29 | 15 | 14 | 29 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 8.6 | 8.6 | 8.6 | 8.6 | 8.6 | 25.6 | 24.6 | 25.6 | 38.6 | 25.6 | 88.3 | 84.8 | 88.3 | 87.7 | 88.3 | 43 | 8.6 |
| 1SV17EE009 | 14 | 14 | 28 | 15 | 13 | 28 | 13 | 15 | 28 | 2 | 2 | 2 | 2 | 2 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 20.6 | 20.6 | 21.6 | 32.6 | 21.6 | 71.0 | 71.0 | 74.5 | 74.1 | 74.5 | 23 | 4.6 |
| 1SV17EE010 | 14 | 13 | 27 | 15 | 12 | 27 | 12 | 15 | 27 | 2 | 2 | 2 | 2 | 2 | 4.8 | 4.8 | 4.8 | 4.8 | 4.8 | 20.8 | 19.8 | 21.8 | 30.8 | 21.8 | 71.7 | 68.3 | 75.2 | 70.0 | 75.2 | 24 | 4.8 |
| 1SV18EE400 | 13 | 13 | 26 | 15 | 11 | 26 | 11 | 15 | 26 | 2 | 2 | 2 | 2 | 2 | 5 | 5 | 5 | 5 | 5 | 20 | 20 | 22 | 29 | 22 | 69.0 | 69.0 | 75.9 | 65.9 | 75.9 | 25 | 5 |
| 1SV18EE401 | 14 | 14 | 28 | 15 | 13 | 28 | 13 | 15 | 28 | 2 | 2 | 2 | 2 | 2 | 1.6 | 1.6 | 1.6 | 1.6 | 1.6 | 17.6 | 17.6 | 18.6 | 29.6 | 18.6 | 60.7 | 60.7 | 64.1 | 67.3 | 64.1 | 8 | 1.6 |
| 1SV18EE402 | 15 | 14 | 29 | 15 | 14 | 29 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 6 | 6 | 6 | 6 | 6 | 23 | 22 | 23 | 36 | 23 | 79.3 | 75.9 | 79.3 | 81.8 | 79.3 | 30 | 6 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | 73.71 | 72.4 | 77.6 | 73.3 | 77.59 | 27.5 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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# DEPARTMENT OF EEE

| SUBJECT | OPERATING SYSTEM | SUBJECT CODE | 17EE832 |
|---|---|---|---|

**COURSE OUTCOME**

| | |
|---|---|
| **CO1** | Describe the basics of operating system mechanisms of OS to handle processes ,threads, and their communication |
| **CO2** | Analyze the memory management and its allocation policies. |
| **CO3** | Illustrate different conditions for deadlock and their possible solutions. |
| **CO4** | Discuss the storage management policies with respect to different storage management technologies |
| **CO5** | Evaluate the concept of the operating system with respect to UNIX, Linux ,Time and mobile OS |

**PROGRAM OUTCOME**

**PO1** Engineering knowledge: An ability to apply knowledge of mathematics (including probability, statistics and discrete mathematics), science, and engineering for solving Engineering problems and Knowledge.

**PO2** Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3** Design / development of solutions: An ability to design solution for engineering problems and design system components or process to meet desired specifications and needs.

**PO4** Conduct investigations of complex Problem: An ability to identify, formulate, comprehend, analyze, design synthesis of the information to solve complex engineering problems and provide valid conclusions.

**PO5** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling to complex engineering activities.

**PO6** The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues.

**PO7** Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8** Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

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**PO9** Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10** Communication: Communicate effectively on complex engineering activities with the engineering community and with the society.

**PO11** Project management and finance: An ability to use the modern engineering tools, techniques, skills and management principles to do work as a member and leader in a team, to manage projects in multidisciplinary environments.

**PO12** Life-long learning: A recognition of the need for, and an ability to engage in, to resolve contemporary issues and acquire lifelong learning.

| COLLEGE | SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FACULTY NAME | UMABAI | | | | | | | | | | | |
| BRANCH | EEE | | | ACADEMIC YEAR | | | 2020-21 | | | | | |
| COURSE | B.E | SEMESTER | VII | SECTION | EEE | | | | | | | |
| SUBJECT | OPERATING SYSTEM | | | | | SUBJECT CODE | 17EE832 | | | | | |
| CO & PO MAPPING | | | | | | | | | | | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| CO1 | 2 | 2 | | 3 | 3 | - | 3 | - | - | - | - | 3 |
| CO2 | 2 | 2 | | 3 | 3 | - | 3 | - | - | - | - | 3 |
| CO3 | 2 | 2 | | 3 | 3 | - | 3 | - | - | - | - | 3 |
| CO4 | 2 | 2 | - | 3 | 3 | - | 3 | - | - | - | - | 3 |
| CO5 | 2 | 2 | - | 3 | 3 | - | 3 | - | - | - | - | |
| AVERAGE | 2 | 2 | | 3 | 3 | | 3 | | | | | 3 |
| OVERALL MAPPING OF SUBJECT | | | | | | | | | | | | |

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CO AND PO ATTAINMENT

| | CO% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO1 | 72.80 | 1.45 | 1.45 | | 2.18 | 2.18 | | 2.18 | | | | | 2.18 |
| CO2 | 81.85 | 1.63 | 1.63 | | 2.45 | 2.45 | | 2.45 | | | | | 2.45 |
| CO3 | 69.35 | 1.38 | 1.38 | | 2.08 | 2.08 | | 2.08 | | | | | 2.08 |
| CO4 | 46.85 | 0.93 | 0.93 | | 1.40 | 1.40 | | 1.40 | | | | | 1.40 |
| CO5 | 87.84 | 1.75 | 1.75 | | 2.63 | 2.63 | | 2.63 | | | | | 2.63 |
| AVERAGE | 71.73 | 1.42 | 1.42 | | 2.14 | 2.14 | | 2.14 | | | | | 2.14 |
| FINAL ATTAINMENT LEVEL | | | | | | | | | | | | | 2.28 |

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| SEM: V, EEE | IA TEST 1 | | | IA TEST 2 | | | IA TEST 3 | | | Assignment | | | | | | SEE | | | | | | TOTAL | | | | | Average | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| USN | CO1 | CO2 | TOTAL | CO3 | CO4 | TOTAL | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | TOTAL | CO1 | CO2 | CO3 | CO4 | CO5 | CO1 | CO2 | CO3 | CO4 | CO5 |
| 1sv17EE002 | 11 | 14 | 25 | 14 | 9 | 23 | 11 | 16 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 38 | 20.6 | 23.6 | 23.6 | 20.6 | 25.6 | 0.71 | 0.81 | 0.81 | 0.47 | 0.88 |
| 1sv17EE004 | 14 | 14 | 28 | 12 | 15 | 27 | 14 | 15 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 33 | 22.6 | 22.6 | 20.6 | 22.6 | 23.6 | 0.78 | 0.78 | 0.71 | 0.51 | 0.81 |
| 1sv17EE005 | 9 | 20 | 29 | 10 | 18 | 28 | 13 | 16 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 10.6 | 10.6 | 10.6 | 10.6 | 10.6 | 53 | 21.6 | 32.6 | 22.6 | 25.6 | 28.6 | 0.74 | 1.12 | 0.78 | 0.58 | 0.99 |
| 1sv17EE009 | 12 | 14 | 26 | 11 | 14 | 25 | 15 | 12 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 7.4 | 7.4 | 7.4 | 7.4 | 7.4 | 37 | 21.4 | 23.4 | 20.4 | 24.4 | 21.4 | 0.74 | 0.81 | 0.70 | 0.55 | 0.74 |
| 1sv17EE010 | 14 | 12 | 26 | 14 | 11 | 25 | 10 | 17 | 27 | 2 | 2 | 2 | 2 | 2 | 10 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 23 | 20.6 | 18.6 | 20.6 | 16.6 | 23.6 | 0.71 | 0.64 | 0.71 | 0.38 | 0.81 |
| 1sv18EE400 | 12 | 13 | 25 | 7 | 17 | 24 | 9 | 17 | 26 | 2 | 2 | 2 | 2 | 2 | 10 | 6.4 | 6.4 | 6.4 | 6.4 | 6.4 | 32 | 20.4 | 21.4 | 15.4 | 17.4 | 25.4 | 0.70 | 0.74 | 0.53 | 0.40 | 0.88 |
| 1sv18EE402 | 11 | 16 | 27 | 9 | 16 | 25 | 7 | 22 | 29 | 2 | 2 | 2 | 2 | 2 | 10 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 32 | 19.5 | 24.5 | 17.5 | 15.5 | 30.5 | 0.67 | 0.84 | 0.60 | 0.35 | 1.05 |
| 1sv18EE403 | 13 | 14 | 27 | 11 | 15 | 26 | 13 | 15 | 28 | 2 | 2 | 2 | 2 | 2 | 10 | 7.2 | 7.2 | 7.2 | 7.2 | 7.2 | 36 | 22.2 | 23.2 | 20.2 | 22.2 | 24.2 | 0.77 | 0.80 | 0.70 | 0.50 | 0.83 |
| TOTAL | 96 | 117 | 213 | 88 | 115 | 203 | 92 | 130 | 222 | 16 | 16 | 16 | 16 | 16 | 80 | 56.9 | 56.9 | 56.9 | 56.9 | 56.9 | 284 | 168.9 | 189.9 | 160.9 | 164.9 | 202.9 | 5.82 | 6.55 | 5.55 | 3.75 | 7.00 |
| otal student | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| Average | 12 | 14.63 | 26.6 | 11 | 14.4 | 25.375 | 11.5 | 16.3 | 27.8 | 2 | 2 | 2 | 2 | 2 | 10 | 7.1125 | 7.11 | 7.113 | 7.113 | 7.113 | 35.5 | 21.113 | 23.738 | 20.113 | 20.6125 | 25.3625 | 72.80 | 81.85 | 69.35 | 46.85 | 87.46 |

2020-21 operating system 17ee832

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