



Time: 90 minutes  
Sub Code: 10EC74  
Date: 20/11/17

SHRIDEVI INSTITUTE OF ENGINEERING AND TECHNOLOGY  
(An ISO 9001-2008 Certified Institution)  
DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ACADEMIC YEAR 2017-18  
III INTERNAL ASSESSMENT TEST  
SUBJECT: Embedded System Design



Max Marks: 25  
Semester: VII

Answer any 2 full questions choosing from Q NO. 2,3,4.

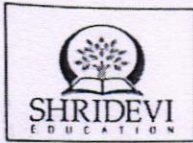
Q NO.1 is Compulsory

- |   |    |
|---|----|
| 1).a). What is a thread   | 1M |
| 2). a). Briefly explain the common life cycle models of an embedded system with a suitable diagrams for each.   | 6M |
| b). Discuss the system design specifications in an embedded systems with an example.  | 6M |
| 3).a). With a suitable schematic and program ,explain the task control block.   | 5M |
| b). Write a hardware architecture and data and counter flow diagram of a counter system and explain briefly flow diagram  | 7M |
| 4). a). Write the algorithm for a simple OS kernel, using C language notation for 3 asynchronous tasks using TCB's only. The 3 tasks use a common data buffer for read, increment, and display operations . | 6M |
| b). Differentiate between:<br>(i) program and process;<br>(ii) processes and threads;<br>(iii) Lightweight and heavy weight threads   | 6M |

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 DEPARTMENT OF ELECTRONICS & COMMUNICATION  
 ENGINEERING  
 ACADEMIC YEAR 2017-18



III INTERNAL ASSESSMENT TEST SCHEME & SOLUTIONS

COURSE INSTRUCTOR:	Latha-k
DEPARTMENT:	Electronics & Communication
COURSE TITLE:	Embedded system Design
COURSE CODE:	10EC74
SIGNATURE:	<i>[Signature]</i>

Q.NO.	SOLUTION	MARKS
1a.	The smallest of the resources necessary for the execution of the program is called thread	1M
2a.	Common life cycle models * Waterfall model * V cycle model * Spiral model * Rapid prototyping	1.5 x 4 = 6M
2b.	System design specifications → Example →	4M 2M
3a	Task Control Block Block diagram → and explanation Program →	3M 2M

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Q.NO.	SOLUTION	MARKS
3b.	Hardware architecture block diagram explanation	4M 3M
Aa	Algorithm for simple os kernel →	6M
b.	Differentiate between	
(i)	program and process	
(ii)	processes and threads →	6M
(ii)	Lightweight and heavy weight threads.	-

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