

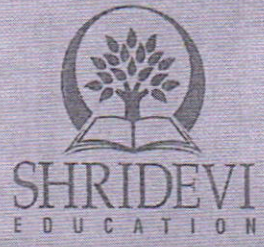
P. No. 34
ACY-2019-20

Sri Shridevi Charitable Trust (R.)

SHRIDEVI INSTITUTE OF ENGINEERING & TECHNOLOGY

(Approved by the AICTE, Affiliated to VTU, Belgaum, Recognized by Govt. of Karnataka.)

TUMAKURU - 572106.



BLUE BOOK

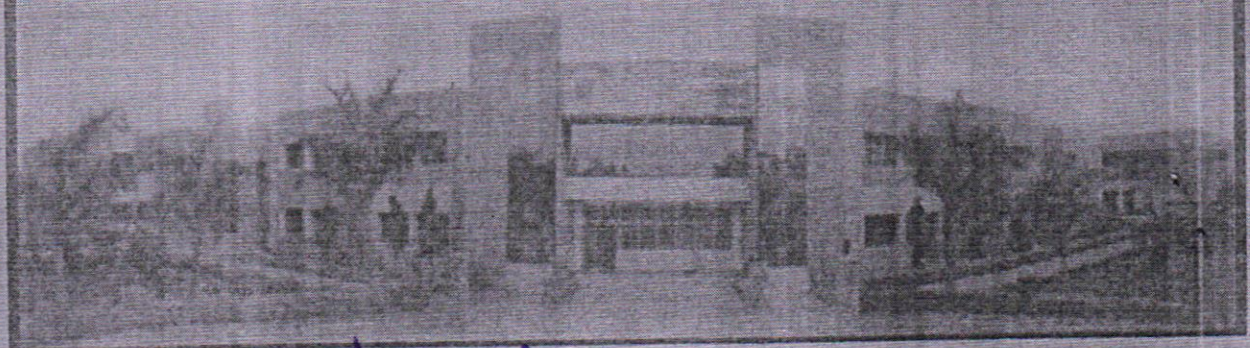
USN :

1	S	V	1	8	C	V	0	3	6
---	---	---	---	---	---	---	---	---	---

Name of Student : VISHWANATHA H P

Course : BUILDING MATERIALS & CONSTRUCTION Code : 18CV34

Semester : III Branch : CIVIL ENGINEERING



Nandini Lakshmi
PRINCIPAL
SIET, TUMAKURU.

INTERNAL ASESMENT MARKS

Date	Test No.	Max. Marks	Marks Obtained	Course Instructor Signature
06/09/2019	01	30	27	12/9/19
21/10/19	02	30	28	25/10/19
26/11/19	03	30	30	29/11/19
	Average	30	28	29/11/19

$$28 + 10 = \frac{38}{40}$$

CERTIFICATE

This is to certify that Kum/Sri VISHWANATHA H.P
 with USN LSV18CV036 has satisfactorily completed the course of
 tests in the subject of Building materials and construction as prescribed by
 the Visvesvaraya Technological University for the 1st year / 1st Sem year / semester
 B.E. degree course in the year 2019 -2020

Signature of the Student

Course Instructor

Head of the Department

PRINCIPAL
 SIET., TUMAKURU.

TEST NO. 1

Q.No.	a	b	c	d	Total
Q1	7	7			14
Q2					
Q3	6	7			13
Q4					
Q5					
Q6					
Test -1 Marks					27

TEST NO. 2

Q.No.	a	b	c	d	Total
Q1	06	07			13
Q2					
Q3	07	08			15
Q4					
Q5					
Q6					
Test -2 Marks					28

TEST NO. 3

Q.No.	a	b	c	d	Total
Q1					
Q2	07	08			15
Q3	07	08			15
Q4					
Q5					
Q6					
Test -3 Marks					30

REMARKS

27/30
12/09/19

28/30
12/09/19

30/30
12/09/19

Nanda Sanyal
PRINCIPAL
SIET., TUMAKURU.

Internal Assessment Test

1a) Building materials are the materials which are used for the construction purpose. Sand, Stone, bricks, cement, steel, are the major building materials.

Uses of Stones

Stones are used as follows

10 Basic material: ^{Structural element} It is used for the construction of roof, foundation, walls, ~~bridges~~ etc lintels, cantilever etc

* Paving: Stones are used to cover the ground in front of paving. It is used in the residential house, industries, factories etc

* Facing: The rock is a massive in structure and it is subjected to a desired required shape. It is known as facing

* Basic materials: ~~Mixtures~~ Building uses: Stones are disintegrated and to form a mixture of cement concrete, roads etc

* Miscellaneous uses: Other than the above uses stones are

used as ~~sto~~ ballast for railways

(ii) Flux in the blast furnace

(iii) The stones are used as a blocks in the bridges, ~~roads~~ retaining walls, piers etc

(b) Requirements of good building stones are

(1) Hardness :- The stone must be hard enough to sustain the load

(2) Toughness :- It must be tough for the construction & it is helpful for the gripping

(3) Strength :- It should be strong to sustain the larger load

(4) Durability :- It should be durable for a longer years

(5) Specific gravity :- It has higher specific gravity

(6) Absorption and porosity :- water should not enter into it and it must be a water resistant

(7) Dressing :- Dressing should be done to give a required shape

(8) Appearance :- Rock is a massive appearance and rough surface

(9) Seasoning :- It should be not affected by the season like hot, cold and rainy

(10) Fire resistance :- It should not catch a fire and it does not contain a ~~oxide~~ and sulphide

(11) Cost :- Cost must be ~~much cheaper~~ lower but the quality is higher

myself

3
Nandan Kumar

SIET

35) Foundation is the substructure which transfers the super structure load into the ground under lying. It is the critical structure and it should be strong enough and carefully design that.

Functions of foundations:
 # Foundation ~~for~~ reduces the load intensity
 # Load is evenly distributed
 # Lateral stability
 # It is not affected by the future ~~changes~~ requirements

36) Site investigation in the field step for the construction of structures
 It includes the following tasks
 # Whether the soil is hard, smooth, mossy, water log grade or type of soil
 # Classification of soil by visual examination
 # Whether the ground is:
 Behaviour of the ground when change in the ground water.
 The subsoil, water is contains oxides and other chemicals which affect the foundation
 # Check whether the ground is shrinking or swelling.
 # Check the amount of the soil under the ground
 # Check the specific gravity of the soil
 # Check the strength of the soil to sustain the heavy load

It is not affected by the under
Safety against undermining.

It should take the dead and ^{imposed} living load.

a) It reduces the load intensity

The load of the building is transferred into the columns and that column loads are transferred to the ground by the foundation.

b) Equal distribution of loads means the load of the building is even in every parts of the building

c) Lateral stability: The building is more stable when the ^{founder} is strong.

d) It is not affected by the future influences

During the time of construction of the adjacent sites, it should not affect the building. So it gives the strength to the building

e) Safety against undermining!

The animals like mice, rat can dig the earth and they make holes in the earth. So that must be avoided by giving a strong foundation.

f) It should take the dead and imposed loads

The self weight of the building and the living load like

man, things etc it is not affected to the building so
it can transfer the load to the ground.

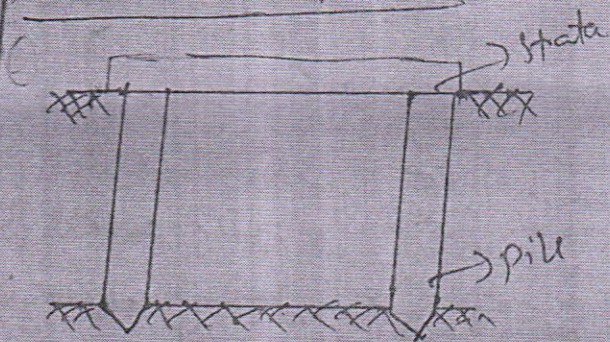
12/09/19

(a) Pile foundation is a deep foundation in which the load is transferred to a very low by means of vertical members such as timber, concrete, steel.

Pile foundations are classified into 4 types based on its function

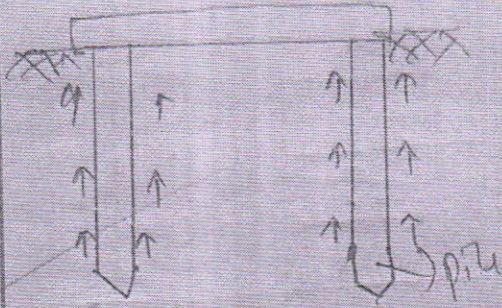
- ① End bearing pile
- ② Friction pile
- ③ Combined end bearing & friction pile
- ④ ~~compact~~ compact pile.

① End bearing pile :-



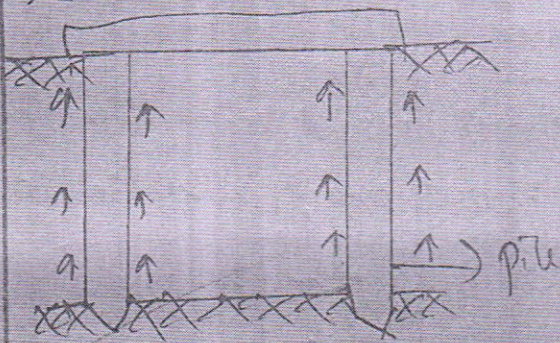
This type of pile is found in the water. It is used to get the stronger bearing of the bridge.

b) Friction pile



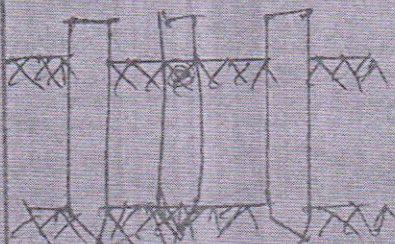
Friction pile is used in the granular soil, which helps to get more strength for the pile.

c) Combined end bearing & friction pile



Combined end bearing & friction pile is used in the loose granular soil. It helps to hold the soil firmly. Very weak materials such as timber, bamboo are used in this type.

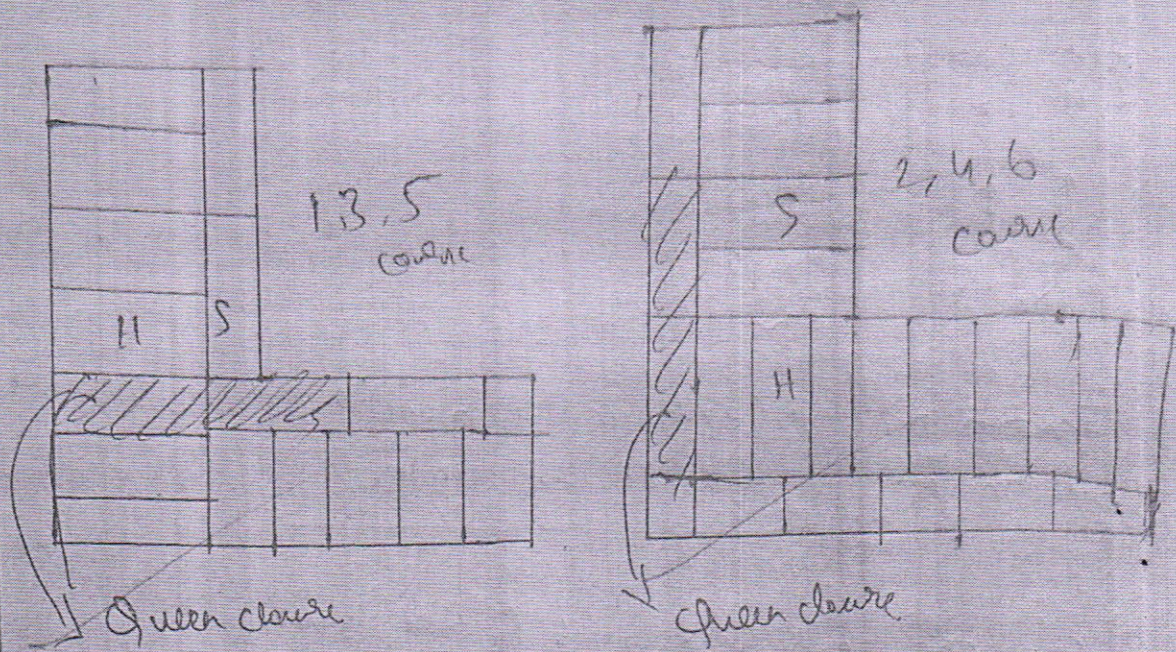
d) Composite pile



Composite pile is used. This type of pile is used if the soil is just excavated and pile is introduced the remaining land is filled with sand.

15)

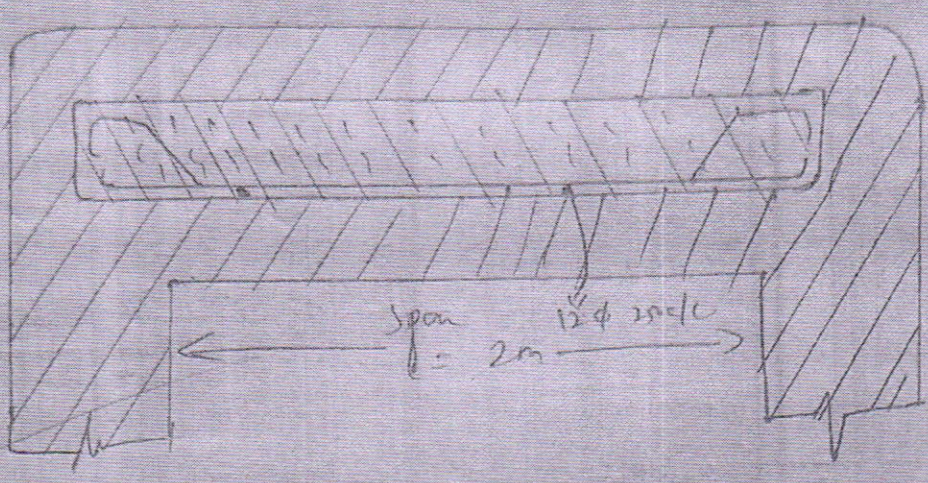
Plan of $1\frac{1}{2}$ brick thick wall



English bond salient features

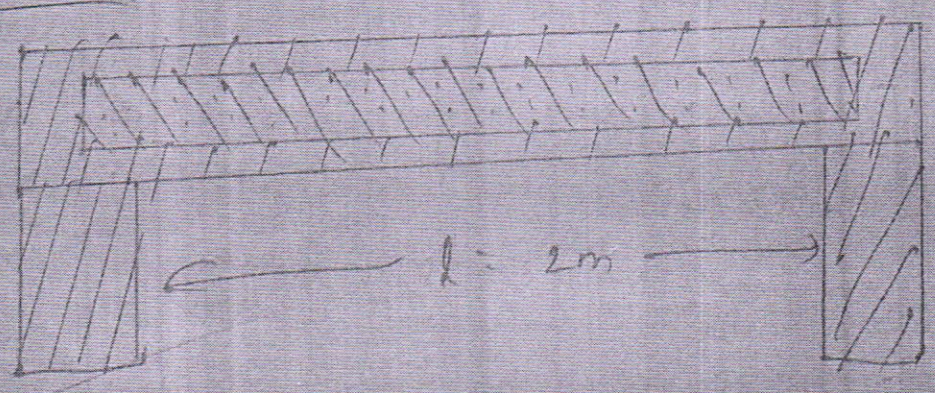
- * English bond is much stronger than Flemish bond
- * It does not alternate header and stretcher in every course
- * There is always a header in the face 2 joints of alternate stretchers
- * No vertical joints present
- * $\frac{1}{4}$ th bp is provided to get the stronger wall
- * Odd number of $\frac{1}{2}$ bricks are used and it looks headers in one face and stretchers in other face.
- * Every course is completely of header or stretchers only
- * It requires unskilled labour.

3a) ~~Stone~~ Lintel R.C.C Lintel



- * R.C.C Lintels are strong, more durable, easy to construct
- * Steels are used to take the tensile loads
- * It is used for the long distance also
- * Load bearing capacity is very high
- * There is no necessity of struts falling the beam.
- * Concrete is used in the proportion of 1:2:4.
- * Thickness of the wall is equal to the thickness of the beam.

Stone Lintel



- * Usually stone lintels are used in the case of stone is prepared.
- * It is not suitable for large span
- * It is not safe for tensile load
- * No steel rods are used in this type of lintel
- * Stone lintel is not used for the heavy loads because it does not have the load more load bearing capacity.

3b) Ingredients of ~~stone~~ brick earth

- * Alumina
- * Silica
- * Lime
- * Oxide of iron
- * Magnesia :

Alumina : It is the chief ingredients of the good soil. It is ~~to~~ mainly 20% to 30% of the alumina must be present in the brick mud so that the cracks and shrinkage may be avoid from this.

Silica : It is present in the form of sand. 50% to 60% of the silica is present in the brick earth. It gives prevents cracks and shrink in the raw bricks.

Lime :- 5% Lime is present in the good brick with not exceeding 5%. The presence of lime gives the strength to hold the silica firmly and hard brick can be prepared from this.

Oxide of iron :- Oxide of iron gives the red colour to the brick and it helps to the brick to mix silica with lime. It is also gives more strength to the brick.
It is 5%.

Magnetia :- It gives yellow colour to the brick.
not used excess because

It gives dark ~~but~~ bluish ^{streak} particles to the brick.

Handwritten signature/initials

2a) Stair case are the structures which are used for the easy movement from floor to floor.

Stair case are of 2 types

- 1) Doglegged stair case
- 2) Open well stair case.

Requirements of good staircase are

* 1) The maximum height from floor to floor should be less than 5m

* 2) ~~Height of the~~ width of landing is equal to width of flight

* 3) NO of ~~stair~~ Thread = NO of rise - 1

* 4) The reinforcement provided should be more stronger

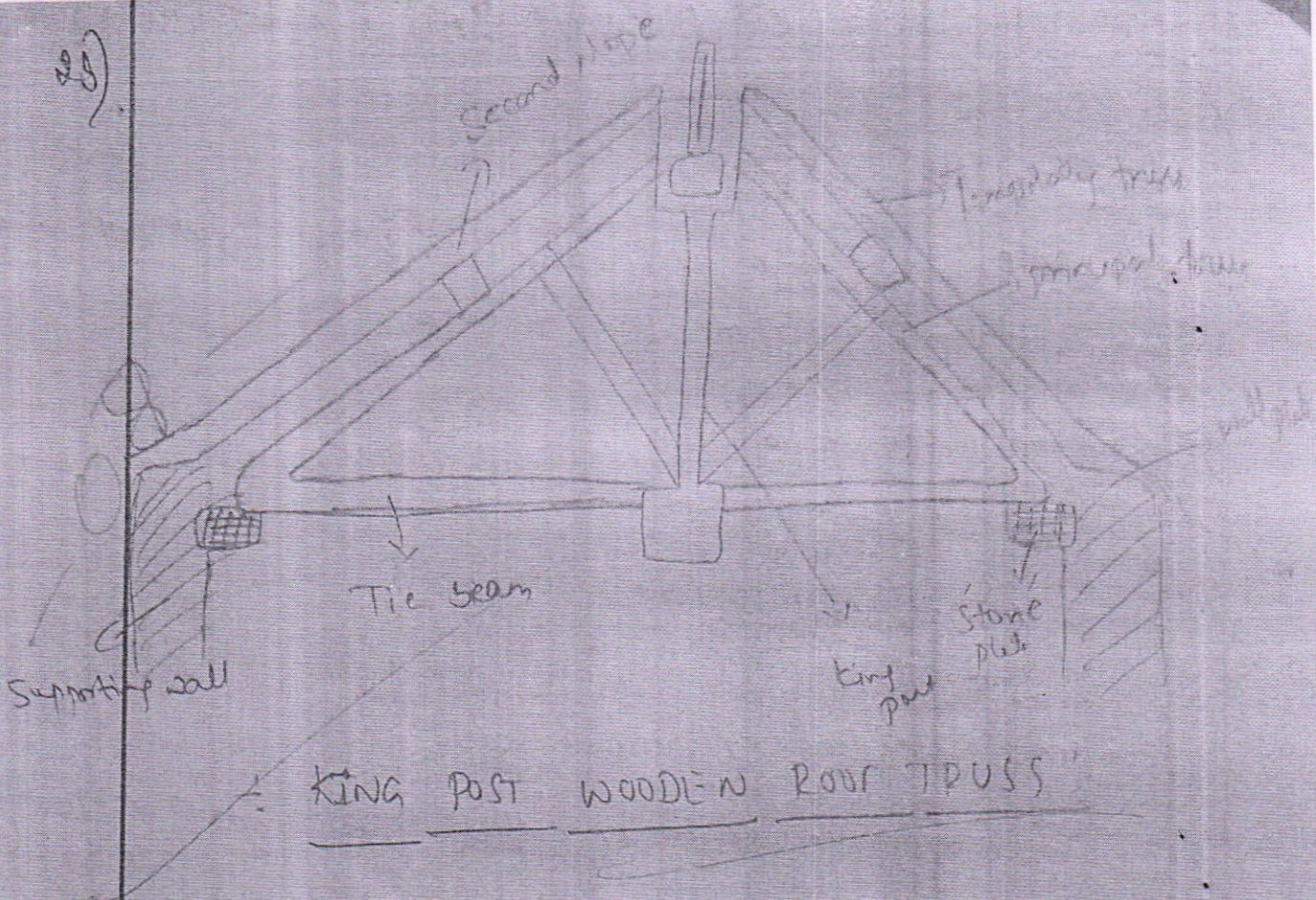
* 5) A good workmanship is needed to analyse the structure

* 6) well plan is needed and it should be execute neatly.

* 7) A double ^{main} reinforcement is provided to the bottom

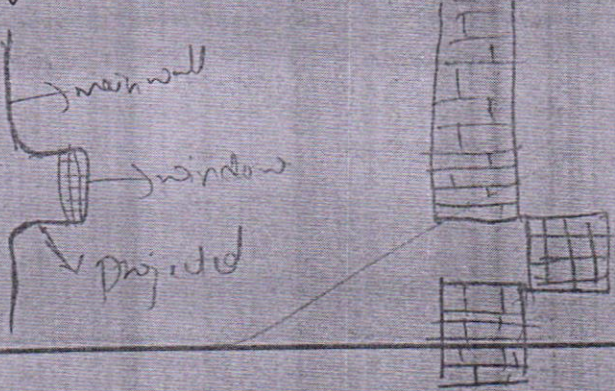
~~Handwritten mark~~

28)



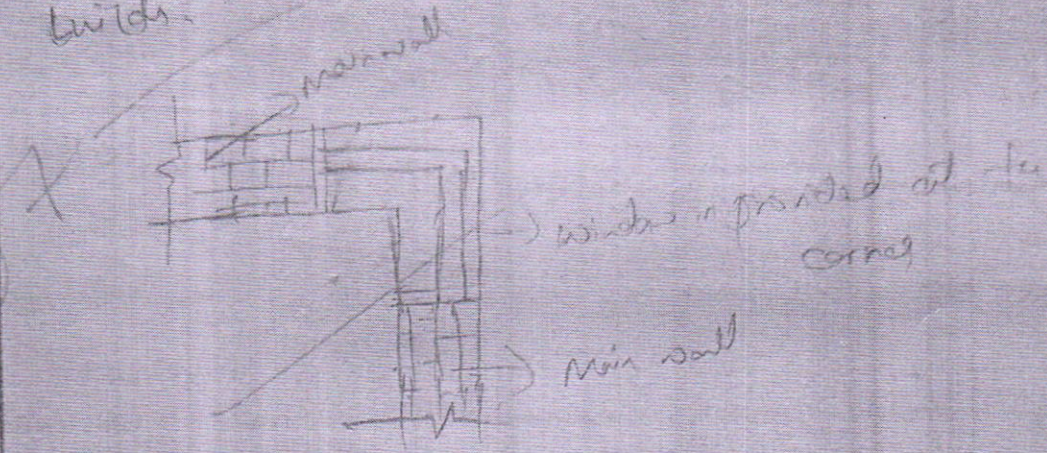
3a)

Bay window: It is a type of window in which the main wall is projected and the opening is provided. This leads to a good light and air facility to the room and the building also looks beautiful. A large area is obtained in the area. So this type of window will also be in the decoration of the building.



Corner window is a type of window in which the window is provided at the corner and both are perpendicular to each other. This helps to get a light and view in 2 different directions. It also helps to get a good light also. It increases a natural light also.

So this type of window is also used in construction of buildings.



- 3b) Objects of plastering
- * Plastering is used to cover the rough uncompleted surface to the smooth surface.
 - * To give a ~~best~~ good look to the building, plastering is made.
 - * To cover the work from unskilled labours, plastering is made.
 - * To rectify the damages to the building, plastering is made.

Defects :-

- * Due to ~~some~~ atmospheric condition, wall get air poked and the plastering is not suitable done.

- * Unskilled labour make plastering in country.
 - * Uneven distribution of the mixture.
 - * Excess usage of components leads to bulging.
 - * water absorption of the wall leads to cracking.
 - * Plastering should prevent the water absorbing. When damage will be caused to the building.
 - * Uneven distribution of the mixture to the wall.
- These are the defects of plastering.

(a) constituents of paints are

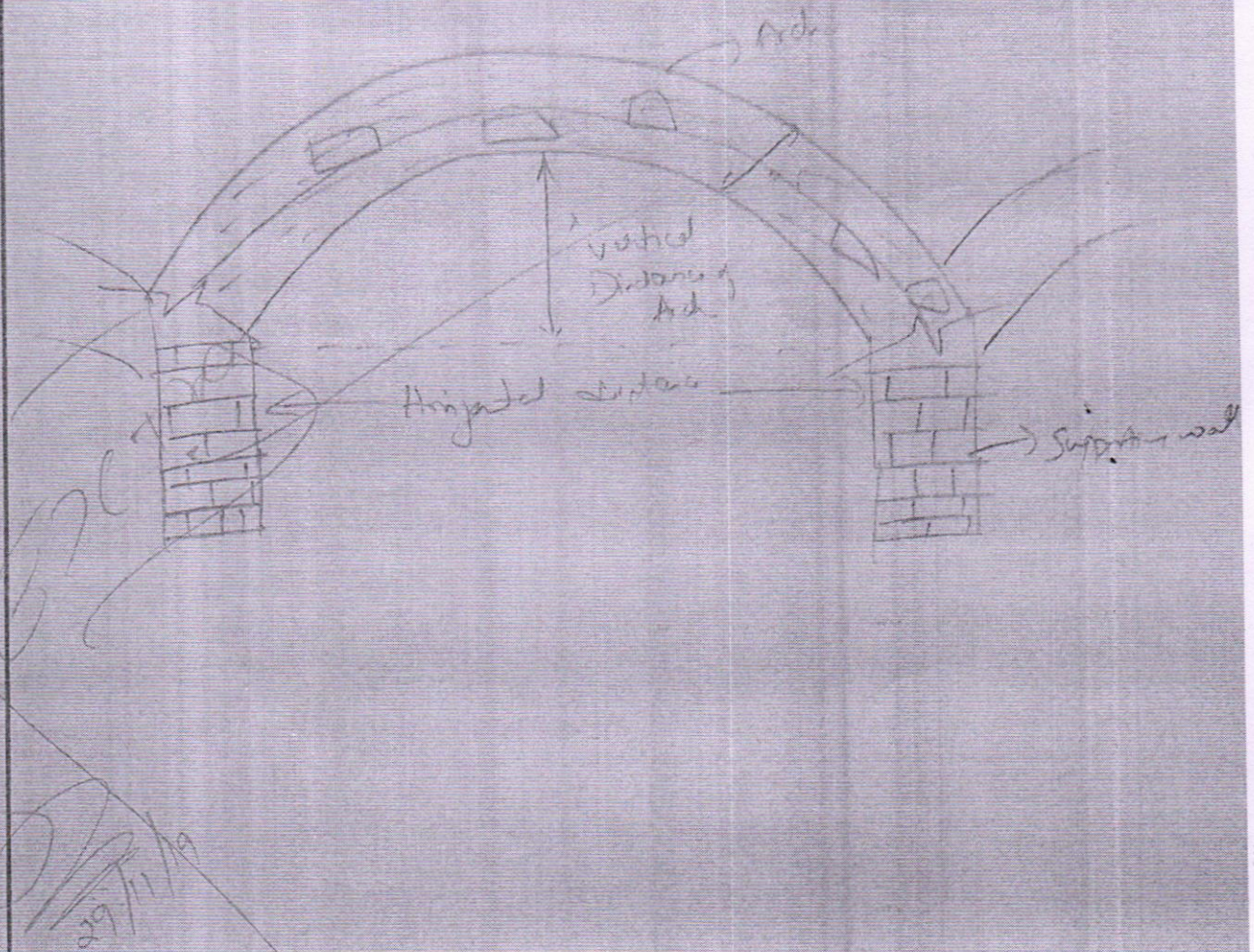
* Base :- It is the main component of the paint in which the paint is made to attach to the wall.

* Vehicle :- It is used in paints to get a clear & good mixing of paint with base, & it helps to resist the absorption of water.

* Colouring pigments :- These are the main factors which are absorbing in our daily life. A different colouring agent allows to get a different coloured paints.

* Surfactant :- It is used mix the different colour with the emulsion.

1b)



Principal