

Sri Rama Krishna Institute of Technology
Basic civil engineering
Unit-2(BUILDING COMPONENTS AND STRUCTURES)
2 mark questions

1. What is masonry?

Masonry is defined as construction of building units bonded together with mortar. The building units may be stones, bricks or precast blocks or concrete etc. masonry is normally adopted for construction of foundation, walls, columns, and other similar structural components of buildings. There are 2 types of masonry. They are 1. Stone masonry 2. Brick masonry

2. What are the two types of Stone masonry?

1. Rubble masonry
2. Ashlar masonry

3. Give list of types of bonds in brick masonry?

Following are the types of bonds in brick masonry

1. stretcher bond
2. Header bond
3. English bond
4. Flemish bond
5. Raking bond
6. Zigzag bond
7. Garden wall bond.

4. State a few general principles adopted in brick masonry construction?

Following are the principles adopted in brick masonry construction

- a. The bricks must be soaked in water before use
- b. The beds of courses shall be perpendicular to the line of pressure.
- c. Bricks should be laid on their beds in proper position.
- d. Use of brick bats should be minimum.
- e. As far as possible the brick work should raise uniformly throughout the length.
- f. The height of masonry constructed in a day should be restricted to 1m
- g. After construction, the brick work should be kept wet at least for 1 to 2 weeks.

5. What is bond in brick work? What is its significance?

Bond is systematic arrangement of bricks in each course such that brick work as a whole is held together both longitudinally and transversally.

6. State a few general principles to stone masonry wall?

- i) Stone should be hard tough and strong.
- ii) Each stone should be well watered before use.
- iii) All stone should be laid on natural bed.
- iv) Small stones should be used for facing.
- v) Mortar should be in proper proportions.

7. Define Rubble masonry?

Rubble masonry constructed by using stones which are irregular in shape or squared and only hammer dressed. It has thick joints.

8. Define flooring?

Flooring are provided to divide the building into different levels for creating more accommodation one above the other. The bottom floor near the ground level is called ground floor. And other floor above it is termed as upper floor.

9. List out materials used for flooring?

The materials used for flooring are

- I. Mud
- II. Concrete
- III. Brick
- IV. Mosaic
- V. Asphalt
- VI. Terrazzo
- VII. Wood
- VIII. Granite
- IX. Marbles
- X. Glass

10. What are the requirements of good flooring?

The requirements of good flooring are

- 1. it should give hard and smooth surface
- 2. it should be damp resistance
- 3. it should be durable and easy to maintain
- 4. it should have adequate strength and stability.

11. define load and stress?

When a body is subjected to a system of external forces. It undergoes a deformation. At the same time. By virtue of the strength, it offers a resistance against this deformation. The internal resistance offered by a body to counteract the applied load is called stress. The external force acting on a body is called stress.

12. difference between tensile stress and compressive stress?

TENSILE STRESS	COMPRESSIVE STRESS
When an external force produces elongation of body in its direction, it is termed as tensile force. corresponding stress is called tensile stress.	When an external force causes shortening of body in the direction of force, it is termed as compressive force. corresponding stress is called compressive stress

13. Define shear stress and shear strain?

shear stress	shear strain
Shear stress exists between 2 parts of a body in contact, when two parts exerts equal and opposite force on each other laterally in a direction tangential to their surface of contact. $q = P/A$	This deformation expressed in terms of angular displacement and it is the tangent of the angle of deformation

14. What is plastic, malleable and ductile material?

Materials that does not come back to its original position on the removal of external load acting on it is known as plastic material. Eg: lead

The material that can be extended or rolled by heating is said to be a malleable material. Eg: wrought iron.

Material that can be drawn into thin wires is called ductile material. Eg: copper, gold.

15. what is purpose of plastering?

- To provide even, smooth, regular, clean and durable finished surface and to improve the appearance.
- To improve a base or ground for white washing, color washing, painting or distempering.
- To prevent and protect the surfaces from atmospheric influences.
- To cover up the use of inferior quality and porous materials and the joints formed in masonry work.

16. list various types of mortar or plaster used in the building.?

- Lime mortar
- Cement mortar
- Water proof mortar

17.what are the objectives of valuation?

The main purpose of valuation is as follows

- ❖ Buying and selling property
- ❖ Taxation
- ❖ Rent fixation
- ❖ Security of loans
- ❖ Compulsory acquisition
- ❖ Insurance

18. Distinguish between carpet area and plinth area of building?

Plinth area	Carpet area
Plinth area is built up cover area of building measured of floor level of any storey. Plinth area is calculated by taking the external dimension of the building at the floor level excluding plinth offset if any court yard, open areas, balconies and cantilever projections are not included in the area.	Carpet area of building is useful area or livable area. This is total floor area minus the circulation area, verandahs, corridors, passages, staircase, lifts, entrance halls, etc.

19. What is bridge? How it is classified?

A bridge is a structure providing passage over an obstacle without closing the way beneath.

Bridge is classified depending up on the following factors

- ✓ **Based on materials used for construction.**
 - ⊕ Timber bridge
 - ⊕ Steel bridge
 - ⊕ Pre-stressed concrete bridge
 - ⊕ Masonry bridge
 - ⊕ Rcc bridge
- ✓ **Based on alignment**
 - ⊕ Straight or square bridge
 - ⊕ Skew bridge
- ✓ **Based on relative position of bridge floor**
 - ⊕ Deck bridge
 - ⊕ Semi through bridge
 - ⊕ Through bridge
- ✓ **Based on function of purpose**
 - ⊕ Highway bridge
 - ⊕ Railway bridge
 - ⊕ Foot bridge
 - ⊕ Vaiduct bridge
 - ⊕ Aqueduct bridge

20. Distinguish between piers and abutments?

Piers	Abutments
The end of superstructure of a bridge is called abutments To transmit the load from the bridge superstructure These are constructed by stonemasonry, brick masonry, plain concrete or reinforced concrete.	Piers are the intermediate supports for the superstructure These are transmit the load from superstructure of bridge to foundation These are constructed by stonemasonry or concrete

21. Define afflux?

When a bridge is constructed, the structure such as abutment and piers cause the reduction of natural waterway area. Due to this obstruction there is rise in water level above the normal level of upstream side of a bridge. The rise in level of water or the difference in level of water surface between the upstream and downstream side of bridges is called afflux.

22. what is roofing? Mention its purpose?

A roofing is defined as uppermost part of the building, which is constructed to protect the building from weather (i.e. from sun, wind, rain)

23. Distinguish between clear span and effective span?

Clear span	Effective span
The distances between inner faces of the support is called the clear span.	Clear span + effective depth of the slab or distance between centres of supports, which ever is less, is known as effective span.

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- Insurance.

25. UNDER WHAT CIRCUMSTANCES PILE FOUNDATIONS ARE PROVIDED?

When the foundation soil is loose and hard stratum is available at reasonable depth.
The live load and dead load coming from the structure is considerably large.

26. WHAT ARE THE CLASSIFICATION OF FOUNDATION ?

- Shallow foundation
- Deep foundation
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27. WHAT ARE THE CLASSIFICATION OF DAMS?

Dams broadly classified into

- Rigid dams
- Non-rigid dams

28. WHAT ARE THE TYPES OF RIGID DAMS?

- Solid gravity dams
- Arch dams
- Buttress dams
- Timber and steel dams
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29. WHAT ARE THE TYPES OF NON- RIGID DAMS?

- Earthen dams
- Rockfill dams

PART-B

1. Find the value of building if the total area is 250m² and plinth area is about 85% of the total area and rate of plinth area= Rs 1500/m². Rate of depreciation is 1.5% per annum. Period of consideration 20years.
2. What are the different types of pile foundation? Explain with neat sketch?
3. Draw the neat sketch of cross section of dam, give forces acting on it?
4. Broadly classify various types of foundation? explain in detail?
5. Define stress, strain, young's modulus?
6. Derive the relation ship between elastic constants?
7. Compare brick masonry with stone masonry?
8. What are the requirements of good plaster? mention its objectives?
9. What are the points to be observed in while supervising brick work?
10. What are the factors to be considered while selecting the site for the construction of bridge?