

BACHELOR OF ARCHITECTURE
2 nd Year 1st Semester Examination 2024

ARCHITECTURAL CONSTRUCTION-I

Time: Three Hours

Full Marks: 100

Instruction: Answer for 100 marks

Use sketches wherever necessary

01. Draw a sectional drawing of an external load bearing wall with windows of a two storeyed building having 3600 mm floor to floor height and 1500 mm deep stepped-brick foundation.

Describe 'heave' and 'subsidence' in relation with foundation. Describe why foundation is provided in a building. With the help of appropriate sketches, describe how the choice of a particular type of foundation is made for an urban plot with limited boundaries when the building is required to be multi-storeyed with changing demand on the sizes of the base of foundation with changing number of storeys.

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02. What are the various foundation types that are usually adopted for construction of buildings? With the help of suitable sketches, describe any four of such foundations. Show the concrete and reinforcement laying details of a typical RCC footing of 1800 X 1200 base size.

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03. Using suitable sketches, describe timber flooring over timber framing with steel posts. Using an appropriate sectional view describe the construction of an old residential building with timber girders, timber runners and timber boardings.

Describe (using suitable sketches) how wall partition is made with timber framing and plywood-lamination and glass combination.

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04. Discuss the utility of trusses for long horizontal spanning. Draw plans, elevations and sectional details explaining construction of any one type of steel truss. Label the different parts of the truss. Show the fixing detail of roof sheeting with corrugated iron sheeting. Show the details at any two joints of the truss. Show the details of fixing of the truss at supports. Show the bracing layout for a trussed shed.

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05. Draw a cavity wall in plan and in sections. Label different parts of it. Draw details at foundation. Discuss the benefits of a cavity wall against ordinary masonry walls. Draw and name different classical architectural mouldings used in buildings.

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06. Write short notes on (any five) (Marks: 5 X 5)

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- (i) Camber in trusses
- (ii) Cramps in Cavity wall
- (iii) Water-cement ratio
- (iv) Gib and Cotter joint
- (v) Sheet Piling