

BACHELOR OF ARCHITECTURE2ND YR. 1ST SEM. EXAM 2014**ARCHITECTURAL CONSTRUCTION-I**

Time: Three Hours

Full Marks: 100

Instruction: Answer for 100 marks

01. Draw a sectional drawing of an external wall with windows of a two storeyed building having 4.0 metre floor to floor height and 1,5 metre deep stepped-brick foundation.

Describe why foundation is provided in a building. Describe under what situations foundation of a building could be subjected to 'heave' and 'subsidence'. 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 used 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 1500 X 1200 base size.

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

Describe (using suitable sketches) how wall partition is done 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 of fixing of the truss at supports. Show the bracing layout for a trussed shed.

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05. Describe what are understood by 'Tensile Structures' Give examples. Draw different types of details of 'Tensile Structures' for fixing at foundations, membranes with posts and ropes, etc. Furnish a few tensile wire rope and membrane structures. Name the usual materials used for wire ropes and membranes used in construction of 'Tensile Structures'.

Discuss the characteristics of Vierendeel girders. Discuss its suitability in buildings.

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06. Draw a typical Steel truss and show details of it at base, any one joint and at purlin showing fixing of roof sheeting. Show locations for wind bracings. How a truss is different from a portal? Describe this.

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07. Write short notes on (any five)

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- (i) Cleats in trusses
- (ii) Cavity wall detail
- (iii) Bird's beak, cyma recta, cyma reversa, ovolo and cavetto
- (iv) material requirements for construction of 1 cubic metre of 250 mm thk Brickwork
- (v) Pre-engineered building
- (vi) Well foundation
- (vii) Construction of a masonry dome
- (viii) Setting out at site
- (ix) Gib and cotter joint
- (x) Tips in plastering