BACHELOR OF ARCHITECTURE

2ND YR. 1ST SEM. EXAM 2023

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 wall through windows of a two storeyed building having 4.0 metre floor to floor height and 1.5 metre deep stepped-brick foundation (measured from the FGL).

    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. **25**

02. Mention and describe the various foundation types that are usually used for construction of buildings. With the help of suitable sketches, describe any five of such foundations. Show the concrete and reinforcement laying arrangement of a typical RCC footing of 1800 X 1200 base size. **25**

03. Draw and describe various types of flooring used in buildings. Using suitable sketches, describe in detail timber flooring over timber framing. Draw a typical section of a 'Jack-Arch Roof'.

    Describe (using suitable sketches) how wall partition is done with timber framing and plywood-lamination and glass combination. **25**

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. **25**

05. Describe the process of Hydration of Cement. Describe 'creep of concrete'. Mention the various types and roles of admixtures in concrete construction. Mention the quantitative requirement of ingredients for 250 mm thick brick works and 1:2:4 & 1:1.5:3 proportioned concrete works. **25**

06. Write short notes on (any five) **(5 X5) =** **25**

(i)   Cleats in trusses
(ii)   Cavity wall detail
(iii)   Pre-engineered building
(iv)   Well foundation
(v)   Construction of a masonry dome
(vi)   Setting out at site
(vii)   Gib and cotter joint
(viii)   Heave and Subsidence
(ix)   Dry wall
(x)   Camber in a Truss