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**SUBJECT CODE NO:- H-5036**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**Fourth Year Arch (Sem-VII)**  
**ABCM-VII**  
**(OLD)**

**[Time: Four Hours]**

**[Max.Marks:100]**

Please check whether you have got the right question paper.

N.B

- i. Attempt any two questions from the section A and any three questions from Section B.
- ii. Use drawing sheet for section A and answer sheet for section B.
- iii. Assume suitable data wherever necessary.
- iv. Use sketches wherever necessary. To be solved on answer sheet.

**Section A**

- Q.1 A factory shade admeasuring  $24m \times 36m$  is to be design with a R.C.C. portal frame with shade height of 5m. 35  
 Draw the following to suitable scale.
- i) Draw key plan showing spacing of portal frame (layout) and section.
  - ii) Foundation details.
  - iii) Enlarged detail showing reinforcement and fixing details at roof-covering with material specification.
  - iv) Name various structural members and state their purposes.
- Q.2 A multipurpose hall admeasuring  $20m \times 35m$  .is to be designed with flat slab. The height of the hall is 3.65m up to beam bottom. 35  
 Use suitable scale.
- i) Draw plan and section.
  - ii) Enlarged detail showing all the reinforcement and construction details.
- Q.3 A financial institute wants to design and construct a safe deposit vault in the basement floor of the building. The size of the vault is  $12m \times 18m$  with the height 3.3 m. 35
- a) Draw plan, elevation and section at suitable scale.
  - b) All important constructional details in enlarged scale.

**Section B**

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| Q.5 | Describe with sketches different pre-fabricated elements used in the industrial buildings.                       | 10 |
| Q.6 | Explain with sketches the importance of expansion joints in building.  | 10 |
| Q.7 | Explain in detail the advantage of pre-stressed concrete system along with the construction details of the same. | 10 |
| Q.8 | Explain with sketches the designing of barrel vault. Also state the advantages.                                  | 10 |