



**HDB-10765**

Seat No. \_\_\_\_\_

**B. Arch. (Sem. IX) Examination**  
**November / December – 2017**  
**Building Materials & Construction - VIII**  
*(Part - II : Construction)*

Time : 4 Hours]

[Total Marks : 80

- Instructions :** (1) Contextual understanding will be considered critically in assessment.  
(2) Support your statement with necessary examples and sketches wherever necessary.  
(3) Each question carries equal weightage of marks.

**1** Give detailed articulation for any one of the following **40**  
condition with neat sketches and give rationale behind.  
Assume and specify necessary information, if not specified.

(a) Articulate a joint between a space frame and RCC Column.

Consider 20 m as span of space frame to cover an industrial workshop area.

Consider Install sequence in your explanation.

Give detail of node of the space frame.

(b) Articulate joints in Cable Suspension.

(a) Main Suspension Cable to Mask/Pier

(b) Main Suspension Cable to Suspender

(c) Suspender and Deck

(d) Main Suspension Cable Anchoring

**2** Attempt any 2 questions out of 3 questions : **20×2=40**

(a) Explain Tensegrity as a structural system with its principles.

(b) Draw any four details with sketches and mention technical terms.

(a) Universal Structural node connecting six members in a space frame.

(b) Roof purlins and corrugated sheet in sloping curved planes.

- (c) Folded Plate Roof on RCC Framed Structure.
  - (d) Doubly Curved Shell Roof Structure on Load Bearing Walls
  - (e) Concrete foundation to support cable stay structure.
- (c) Design a structural system of and detail a semi open space for a resort at sea shore near Diu spanning  $25\text{m} \times 25\text{m} \times 6\text{m}$ . You can use PVC Pipes or Paper tubes or Bamboo. Respond with neat sketches and rationale behind your choices. Assume necessary information, if not specified and mention it clearly in your answer sheet.

