USN

CBCS	SCHEME



Fifth Semester B.Arch. Degree Examination, Aug./Sept.2020 Materials and Methods in Building Construction - V

Max. Marks: 100 Time: 4 hrs.

Note: Answer any FIVE full questions, choosing ONE full question from each module.

M	0	d	u	l	e-	1

- (05 Marks) Define Truss. List the various types of Steel trusses with sketches.
 - (10 Marks) b. List the advantages and disadvantages of steel trusses over conventional roofs. (05 Marks)
 - c. List the various types of roofing materials that can used to roof trusses.

OR

- A factory needs a column free space of 9.0m × 4.0m. Design a suitable truss using angular 2 sections for the same.
 - Draw key plan and section to a suitable scale with all parts labeled and dimensions given.
 - (08 Marks)

(06 Marks)

- Draw the roofing detail with purloin and rafter detail to a suitable scale.
- (06 Marks) c. Draw the Gutter and support detail to a suitable scale.

Module-2

- Define Portal frames. List the various types of portal frames with the help of neat sketches.
 - b. A transformer manufacturing plant needs a column free space of 20m × 4m. Design a rigid frame structure for the same. (05 Marks)
 - c. Draw any one detail to a suitable scale.

(05 Marks)

- Write short notes with explanatory sketches for
 - Shell structures
 - Space frames

(10 Marks)

(10 Marks)

Module-3

- A hall of size 15m × 30m is to be designed using a multi bay Barrel vault system provide the 5 following details:
 - a. Key plan and section 1:100

(08 Marks)

b. Enlarged section with reinforcement 1:20

(06 Marks)

c. Detail of edge beam with gutter detail - 1:10

(06 Marks)

OR

- A sports complex needs an R.C.C folded plate roof for an area of size $20 \times 30 \text{m} \times 5 \text{m}$ 6 height. Draw the following details.
 - Key plan and section 1:100
 - b. Enlarged section 1:20

(08 Marks)

c. Gutter detail - 1:10

(06 Marks)

(06 Marks)

		Module-4 1 callowing detail	ls:			
7		Design a space frame structure for an area of 20×15m. Provide the following detail	(08 Marks)			
,		Design a space name structure for an	(06 Marks)			
	a.	Roof plan and section	(06 Marks)			
	b.	Partial Enlarged section showing connector details	(00 1472323)			
	c.	Type of support system.				
		O.D.				
		OR	(05 Marks)			
8	a.	With the help of sketches explain Tensile Roofs.	(10 Marks)			
	b.	List the different types of tensile roots and the rooting material assessment	(05 Marks)			
	c.	Explain the concept of pneumatic structures with the help of sketches.	(00			
	С.	Explain the concept of the				
		Module-5				
9		Write short notes on the following:	(12 Marks) (08 Marks)			
	a.	a. Water proofing in Basements and toilets				
	b.	Sealants and their application in the building industry.				
		OR ^y				
10		Write short notes on:	(10 Mayles)			
	a.	Applications of recycled plastic in the building industry.	(10 Marks)			
	b.	Uses of plastic in the interiors of a residence.	(10 Marks)			
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