

**SARVAJANIK UNIVERSITY**

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**S-2025 Date: 02-07-25 Time: 09:30 AM to 12:30 PM**  
**Remedial Exam**

8

**B. Arch - SEMESTER– 6 EXAMINATION****Course Code: BRAR12602****Total Marks: 180****Course Name: BUILDING TECHNOLOGY – IV****(Advanced Construction, Structure & Services)****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Draw Illustrations, Sketches, Labeled Diagrams where ever applicable

<b>Q.1.</b>	<b>Answer as directed (All questions are compulsory) – (2 marks each)</b>	<b>32 Marks</b>
1)	Aluminium Composite Panel (ACP) is produced by thoroughly mixing ground wood particles and heated thermoplastic resin. (True / False)	
2)	Specific Heat and Melting Point are attributes of Fire leading materials deterioration. (True / False)	
3)	When a sound is reflected off a wall or other solid surface, the returning sound waves reinforce the original sound and the phenomena is called the Haas effect. (True / False)	
4)	Castellated girders are used in earthquake zones. (True / False)	
5)	PTFE Coated fibre glass fabric and Silicone-coated fibre glass are types of Tensile Fabrics. (True / False)	
6)	Reverberation is an acoustical defect. (True / False)	
7)	Stability due to wind is not crucial in tensile structure. (True / False)	
8)	Curtain wall façade carries no structural load beyond its own dead load weight. (True / False)	
9)	Plate girder are made from Plates & angle section. (True / False)	
10)	_____ which is fire protected is one of the important provisions in the Fire Fighting Service Core.	
11)	Double curvature and double cable systems are used in _____.	
12)	The four most commonly used metals for cladding are steel, aluminium, _____ and _____.	
13)	Full form of GFRC is _____.	
14)	The loudness of the sound is measured in _____.	
15)	Lamella dome is a type of _____ structure.	
16)	_____ panel is a type of manufactured timber made from thin sheets of substrates or wood veneer.	
<b>Q.2.</b>	<b>Answer as directed (Answer any three) – (20 marks each)</b>	<b>40 Marks</b>
1)	Classify Singly curve shells and Double curve shells with examples.	
2)	Design a large span cable stayed roof structure having 20,000 square meter area. Choose plan of any shape, for a multipurpose gathering space. Decide a specific form stable against wind. Explain load transfer, draw plan, section, sketch showing dimension of structural members, approximate cross section, size & connection details at various joint as per your design. Explain material you choose.	

3)	Differentiate between Cross laminated Timber and Glue laminated Timber. Draw neat sketches also.	
<b>Q.3.</b>	<b>Write Short notes (Answer any three) – (16 marks each)</b>	<b>48 Marks</b>
1)	What is 'Curtain Wall Glazing'? Draw neat sketch showing its components. And explain in brief any two types of 'Curtain wall Glazing'.	
2)	What are Tensile Fabric Structures and what are its uses? Write 4 types of Tensile fabrics. And write down all the properties of tensile structures and fabrics.	
3)	Describe folded plate structures in details with neat sketches.	
4)	Explain following terms along with load transfer and sketches. (Any two) 1. Circular Dome. 2. Cable stayed structure 3. Cable net structure.	
<b>Q.4.</b>	<b>Explain in detail (Answer any three) – (20 marks each)</b>	<b>60 Marks</b>
1)	Consider four storied corporate office building having offices on two sides of 2m Wide Corridor. Size of each bay of office is 3.0 m x 4.5 m x 3.0 m. a) Design a Pressurized lobby / corridor with offices on two sides, Stair cabin and Lift of Size prescribed as per NBC along with indicating the escape route – Plan <b>(10 Marks)</b> b) Draw the section of the same with location of Active and Passive Ventilation System – Plan <b>(10 Marks)</b>	
2)	Explain in detail about acoustical defects.	
3)	A multi Storied building has a Basement Parking and 8 Floors and Terrace Area. • 1 <sup>st</sup> Floor is Dining Restaurant • 2 <sup>nd</sup> and 3 <sup>rd</sup> Floor is Administration and Recreational space • 4 <sup>th</sup> to 8 <sup>th</sup> are Hotel rooms a) Design (draw and label diagram) Compartmentation for the Building at Site Level and Block level along with the service core. Draw section and elevation to explain the same. <b>(10 Marks)</b> Draw the provisions of both Active and Passive Fire Fighting System for the same through Plan and Elevation. <b>(10 Marks)</b>	
4)	Enlist the types of Sound insulating techniques and explain any two in detail.	