U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester: III**
Branch: Civil Engineering **Duration: 3 hrs.**
Course Code: 19CV3PCBMC **Max Marks: 100**
Course: Building Materials and Construction

Instructions:
1. Answer any FIVE full questions, choosing one full question from each unit.
2. Units 1 and 4 have internal choice.
3. Provide illustrations / sketches wherever necessary.
4. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	CO	PO	Marks
1	a)	Discuss the characteristics of good quality bricks. Mention any two structural applications.	*1*	*1,2,3, 7*	**08**
	b)	Describe the following wood products – Veneers, Particle board and Block boards.	*1*	*1,2,3, 7*	**04**
	c)	Explain the dry process of cement manufacturing with a neat flow chart.	*1*	*1,2,3, 7*	**08**
		OR			
2	a)	Elucidate the characteristics of good quality stones used for construction.	*1*	*1,2,3, 7*	**06**
	b)	Explain the following terminologies and its properties : (i). Quick lime (ii). Fat lime (iii). Hydrated lime	*1*	*1,2,3, 7*	**06**
	c)	Discuss various heat treatment methods done to improve the desirable properties of steel.	*1*	*1,2,3, 7*	**08**
		UNIT - II			
3	a)	With a neat sketch, explain the various structural components of a load-bearing building from foundation to parapet coping.	*2*	*1,2*	**10**
	b)	Discuss safe bearing capacity (SBC) of soil and methods to improve it.	*2*	*1,2*	**06**
	c)	Identify the type of foundations that can be constructed in the following cases and write a note on them. (i). Heavy column loads and soil has low SBC (ii). Weak top soil and load to be transferred to lower strata	*2*	*1,2*	**04**
		OR			
4	a)	Describe the brief procedure for plate load test by gravity load platform method with a neat sketch of the experimental set up. What inference can be obtained from this test?	*2*	*1*	**10**

		b)	A building experiences recurring issues with dampness and water infiltration through the foundation, leading to structural damage and mold growth. As a consulting engineer, develop a detailed plan to address the moisture-related issues plaguing the building to conduct a comprehensive assessment of the damp-proofing and waterproofing methods discussed.	*3*	*1*	**10**
			UNIT - III			
	5	a)	Explain the following terms in brick masonry with a neat sketch: (i). Stretcher (ii). Header (iii). Perpends (iv). Frog	***3***	***1,2,3***	**10**
		b)	Discuss the following aspects – (i). Pre-construction anti-termite treatment (ii). Causes for dampness in buildings	***3***	***1,2,3***	**10**
			OR			
	6	a)	With a neat sketch discuss any four different types of bonds adopted in brick and stone masonry.	*3*	*1*	**10**
		b)	Elaborate on the types of stone masonry.	***3***	***1,2,3***	**06**
			UNIT - IV			
	7	a)	With a neat labelled figure, explain the different components of a paneled door.	***3***	***1,2,3***	**10**
		b)	With neat sketches, explain flat arch and semi-circular arch.	***3***	***1,2,3***	**10**
			OR			
	8	a)	Discuss any three types of windows used in residential buildings.	***3***	***1,2,3***	**06**
		b)	Enumerate the factors affecting the choice of selecting the flooring material.	***3***	***1,2,3***	**06**
		c)	Identify, suggest and explain the suitable roofing systems for the following scenarios – (i). Area with heavy rainfall (ii). Area with moderate to low rainfall	***3***	***1,2,3***	**08**
			UNIT - V			
	9	a)	Design a dog-legged staircase for a building with a roof height of 3.5m. The staircase room available is 3.0 x 5.0m. Provide the plan and section.	***3***	***1,2,3***	**10**
		b)	Explain the method of surface preparation to be followed for plastering on old and new walls.	***3***	***1,2,3***	**10**
			OR			
	10	a)	Describe any five defects in painting.	***3***	***1,2,3***	**10**
		b)	List and explain different types of staircases with near sketches.	***3***	***1,2,3***	***10***

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