U.S.N.										

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

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: VI**

Branch: Civil Engineering **Duration: 3 hrs.**

Course Code: 20CV6PESMA **Max Marks: 100**

Course: Structural Masonry

Instructions:

1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.
3. Use of IS 1905 is permitted

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)		Explain the classification of brick and list the desirable qualities of good brick	*CO1*	*PO 1*	**10**
	b)		List and explain the constituents of good brick earth	*CO1*	*PO1*	**10**
			OR			
2	a)		Compare the technical characteristics of brick masonry and block masonry	*CO1*	*PO1*	**10**
	b)		Engineered Masonry can be a viable alternative for low to moderate height buildings in the Indian context"? Support this statement with suitable reasoning and illustrations/examples	*CO1*	*PO1*	**10**
			UNIT - II			
3	a)		Describe the various factors that govern the compressive strength of masonry?	*CO1*	*PO1*	**10**
	b)		Differentiate between wall, prism and Wallette? How is compressive strength of masonry evaluated experimentally?	*CO1*	*PO1*	**10**
			OR			
4	a)		List and explain the different types of walls mentioned in IS 1905 with neat sketches	*CO1*	*PO1*	**08**
	b)		What are the various parameters w.r.t workmanship which can affect the strength of masonry	*CO1*	*PO1*	**12**
			UNIT - III			
5	a)		Enumerate and explain the different factors affecting the bond strength of masonry	*CO2*	*PO1*	**10**

		b)	Explain in detail the procedure for determining shear strength of masonry using diagonal tension test	*CO2*	*PO1*	**10**
			OR			
	6	a)	Explain bond wrench test used for evaluating flexural bond strength of masonry	*CO2*	*PO1*	**10**
		b)	Describe couplet and triplet test in detail with the help of sketch	*CO2*	*PO1*	**10**
			UNIT - IV			
	7	a)	Compare the technical characteristics of reinforced masonry and plain masonry	*CO2*	*PO1*	**08**
		b)	Explain with sketches the different modes of introducing reinforcement in masonry	*CO2*	*PO1*	**12**
			OR			
	8	a)	Discuss the box action of masonry subjected to lateral loading such as earthquake	*CO2*	*PO1*	**10**
		b)	Explain the following i) Containment reinforcement in masonry ii) Confined Masonry	*CO2*	*PO1*	**10**
			OR			
	9	a)	Explain the following i) Effective height , effective length and effective thickness of walls ii) Stress reduction and Area Reduction Factor iii) Increase in permissible stresses of masonry due to lateral loads	*CO2*	*PO1*	**10**
		b)	A solid wall of 230 mm thickness is constructed with clay bricks of unit strength of 8 MPa and H2 type mortar. The floor to floor height is 3.25 m. The load is acting axially on the wall. Compute the permissible compressive stress in masonry. If an e/t= 0.25, what would be the change in permissible compressive stress.	*CO2*	*PO1*	**10**
			OR			
	10		Design an interior cross wall of a two storeyed building with 125mm thick R.C slab and 3100mm ceiling height. The wall is unstiffened and it supports 2600mm wide slab on either side. Take imposed load on roof and floor = 1.5 kN /m^2 and 2.0 kN /m^2. Assume load to Floor finish = 0.8 kN /m^2 and thickness of Weather proof course = 100mm.	*CO2*	*PO3*	**20**

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