

U.S.N.								
--------	--	--	--	--	--	--	--	--

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

Autonomous Institute Affiliated to VTU

## July 2023 Semester End Main Examinations

**Programme: B.E.**

**Branch: Civil Engineering**

**Course Code: 20CV6PESMA**

**Course: Structural Masonry**

**Semester: VI**

**Duration: 3 hrs.**

**Max Marks: 100**

**Date: 19.07.2023**

**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 (1987 and revised ed.) permitted.

<b>UNIT - I</b>			<b>CO</b>	<b>PO</b>	<b>Marks</b>
1	a)	Enumerate the various ingredients of good brick earth? State the role played by every constituent in it	<i>CO1</i>	<i>PO1</i>	<b>10</b>
	b)	List the various tests that are conducted to evaluate the quality of brick as per Indian standard? Explain briefly any two of them.	<i>CO1</i>	<i>PO1</i>	<b>10</b>
<b>UNIT - II</b>					
2	a)	What are the various factors that control the compressive strength of masonry? Explain in detail	<i>CO2</i>	<i>PO2</i>	<b>12</b>
	b)	Discuss the common workmanship errors in masonry construction	<i>CO2</i>	<i>PO2</i>	<b>08</b>
<b>UNIT - III</b>					
3	a)	Explain bond wrench test with a neat sketch?	<i>CO2</i>	<i>PO1</i>	<b>08</b>
	b)	List and explain the various governing factors that affect the bond strength in masonry	<i>CO1</i>	<i>PO1</i>	<b>06</b>
	c)	Compare the technical characteristics of masonry prism vs masonry wall	<i>CO2</i>	<i>PO1</i>	<b>06</b>
<b>UNIT - IV</b>					
4	a)	What is the necessity of introducing reinforcement in masonry? How does the presence of it benefit the masonry	<i>CO2</i>	<i>PO1</i>	<b>06</b>
	b)	Discuss the different patterns of introducing reinforcement in masonry with neat sketches	<i>CO2</i>	<i>PO1</i>	<b>14</b>
<b>OR</b>					
5	a)	Discuss the different schemes as per Indian standard codal provisions for reinforced masonry	<i>CO2</i>	<i>PO1</i>	<b>12</b>

**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.

	b)	Describe the box action in masonry under the action of lateral loads	CO2	PO1	<b>08</b>
		<b>UNIT - V</b>			
6		Design an interior cavity wall of a 3- storied building such that the ceiling height of each storey is 3m. The wall is unstiffened and is 3.6m long. Assume the loading as follows i) Load from Roof = 12 kN /m ii) Load from floor = 10 kN /m ( for each floor) Take overall thickness of cavity wall as 250mm and thickness of each leaf as 100mm	CO3	PO3	<b>20</b>
		<b>OR</b>			
7	a)	Define effective height and effective length for walls as per IS-1905-1987. Indicate its different cases and its values mentioned in IS 1905-1987	CO3	PO3	<b>10</b>
	b)	A solid wall of 150 mm thickness is constructed with solid concrete blocks of unit strength of 5 MPa and M2 type mortar. The floor to floor height is 3.2m. The load is acting axially on the wall. Determine the permissible compressive stress in masonry.	CO3	PO3	<b>10</b>

\*\*\*\*\*

B.M.S.C.E. - EVEN SEMESTER 2022-23