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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Third Semester, B.E. - Civil Engineering
Semester End Examination; March - 2021
Building Materials and Construction

Time: 3 hrs   Max. Marks: 100

Course Outcomes

The Students will be able to:
CO1: Understand the properties and use of construction materials.
CO2: To identify types of footing, RCC, raft foundations in different soils.
CO3: To classify Bonds in brick work, English bond, Flemish bond, Joints in stone masonry, arches.
CO4: To understand the building components and method of construction.

Note: *I) PART - A is compulsory. **Two** marks for each question.*
      *II) PART - B: Answer any **Two** sub questions (from a, b, c) for Maximum of **18 marks** from each unit.*

Q. No.	Questions	Marks	BLs	COs	POs
	I : PART - A	**10**			
I a.	Mention the uses of stones.	2	L1	CO1	PO1
b.	What are the preliminary investigations of soil?	2	L1	CO3	PO1
c.	Write the sketches of Queen closer and King closer.	2	L1	CO3	PO2
d.	Define Roof and Ventilator.	2	L1	CO3	PO2
e.	Write a brief note on stucco plastering.	2	L1	CO3	PO2
	II : PART - B	**90**			
	UNIT - I	**18**			
1 a.	What is tempering? Explain the process of tempering with the help of neat diagram.	9	L1	CO3	PO2
b.	Explain burning of bricks with Bull-trench kiln along with a sketch.	9	L2	CO3	PO2
c.	Explain various methods of artificial seasoning.	9	L2	CO1	PO1
	UNIT - II	**18**			
2 a.	Explain plate-load test for determining bearing capacity of soil.	9	L2	CO2	PO1
b.	Explain the methods for increasing the bearing capacity of soil.	9	L2	CO2	PO1
c.	Two loads of 1000 kN and 1500 kN are carried by square column 500 × 500 mm and 600 × 600 mm respectively. The centre to centre distance between the columns is 5 m. The footing is not to project more than 250 mm beyond the outer edge of the smallest column. The allowable bearing capacity of the soil on which the column are to rest is 250 kN/m^2. Determine the dimensions of the combined footing.	9	L3	CO3	PO2
	UNIT - III	**18**			
3 a.	Explain English bond and Flemish bond along with the sketch, and mention their advantages.	9	L2	CO3	PO2
b.	What is stability of an arch and how the failure of arch is caused? Explain them briefly.	9	L2	CO3	PO2

c. What is underpinning? What are the situations demanding underpinning? Explain any one method of underpinning with sketch.   9   L2   CO3   PO2

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UNIT - IV   **18**

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4 a. Explain queen post truss with sketch along with joints.   9   L2   CO3   PO2

 b. What are the requirements of good stairs? Explain them briefly.   9   L2   CO3   PO2

 c. Define door and write the sketches of;
    i) Paneled door
    ii) Framed flush door   9   L2   CO3   PO2
    iii) Dormer window
    iv) Gable window

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UNIT - V   **18**

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5 a. What is plastering, purpose of plastering and what are the requirements of good plaster?   9   L2   CO4   PO2

 b. List the properties of distemper and explain the process of distempering.   9   L1   CO4   PO2

 c. List the advantages of cost effective construction and write a note on precast doors and windows.   9   L3   CO4   PO2

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