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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)**B.E. /B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, Nov / Dec 2024****CIVIL ENGINEERING****Semester- III****CE5302 - CONSTRUCTION MATERIALS, TECHNIQUES AND PRACTICES**
(Regulation 2019)

Max. Marks: 100

Time: 3 hrs

CO1	Identify the good quality of brick for construction.
CO2	Design the concrete mixes for different exposure conditions
CO3	Understand material properties of cement and aggregates.
CO4	Study the market forms of timber and steel.
CO5	Recognize the good practices of thermal insulations and air conditioning of buildings

BL – Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Appling, L4-Analysing, L5-Evaluating, L6-Creating)

PART- A (10x2=20Marks)
(Answer all Questions)

Q. No.	Questions	Marks	CO	BL
1	List out the characteristics of a good stone	2	CO1	L1
2	Explain the advantages of artificial stones	2	CO1	L2
3	Write any one test on sand.	2	CO2	L1
4	Grade of concrete-define.	2	CO2	L2
5	Distinguish between heart wood and sap wood.	2	CO3	L2
6	Different types of industrial timber.	2	CO3	L1
7	Name some common diseases of timber.	2	CO4	L2
8	Enumerate the properties of Glass?	2	CO4	L1
9	Define underpinning.	2	CO5	L2
10	What are Geomembranes?	2	CO5	L1

PART- B (5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q. No.	Questions	Marks	CO	BL
11 (a)	(i) Explain the characteristics of good building stone. Explain the methods of preservation of building stones at the time of construction stage.	13	CO1	L1
OR				
11 (b)	(i) List the Classification of Bricks.	7	CO1	L1
	(ii) Describe the various tests on bricks.	6		L2
12 (a)	(i) Explain sampling and testing of aggregates.	6	CO1	L2
	(ii) Describe the method for determining the compressive strength of cement mortar. Additionally, explain the procedure for evaluating the fineness of cement.	7		L1
OR				
12 (b)	Explain how the following tests are conducted on aggregate as per IS codes:	6	CO1	L1
	(i) Flakiness Index and Elongation Index	7	CO1	L1
	(ii) Crushing strength of aggregate			
13 (a)	Describe the properties of hardened concrete and also explain the different strength tests to be conducted on concrete.	13	CO1	L1

OR

13 (b)	Document the full process for designing a concrete mix following the BIS (Bureau of Indian Standards) guidelines, incorporating all required steps and assumptions for the necessary data.	13	CO1	<u>L2</u>
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14 (a)	(i) Describe the process of manufacturing of Glass? What are the Uses of glass in construction industry?	13	CO1	<u>L1</u>
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OR

14 (b)	(i) Discuss about aluminum and its alloys.	7	CO1	<u>L2</u>
	(ii) List and explain the market forms of timber.	6	CO1	<u>L2</u>

15 (a)	Explain the various methods of manufacture of glasses with neat sketches.	13	CO1	<u>L2</u>
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OR

15 (b)	Describe in detail the construction practices to be followed for acoustics and fire protection.	13	CO1	<u>L1</u>
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PART- C (1x 15=15Marks)
(Q.No.16 is compulsory)

Q. No.	Questions	Marks	CO	BL
16.	As a civil engineer recommend various building materials involved in the construction of a building with their criteria with respect to quality	15	CO1	<u>L2</u>

