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**The Assam Royal Global University**  
**Royal School of Engineering and Technology**  
**B.Tech. (Civil Engineering) 8th Semester**  
**Special Supplementary Examination, August 2024**  
**Course: Building Materials (Open Elective IV)**  
**Code: CEE022G801**

Time: 3 hours

Maximum Marks: 70

**Attempt all questions as per instructions given.**  
*The figures in the right-hand margin indicate marks.*

**Section-A**

Q. No.	Answer the following in brief (within 50 words)	Marks	CO	BT Level
1(a)	What are the harmful ingredients in brick earth?	2	CO 1	BT 1
1(b)	Solve for the yield of concrete per bag of cement for a concrete mix of M25 grade of concrete.	2	CO 3	BT 3
1(c)	List out the uses of Lime and Silica in preparation of cement.	2	CO 1	BT 1
1(d)	Why is gypsum added while manufacturing cement?	2	CO 1	BT 1
1(e)	Define high workable concrete and low workable concrete.	2	CO 1	BT 1
1(f)	Explain slump test for measuring workability of concrete.	2	CO 2	BT 2
1(g)	Choose few causes of failure in oil paints?	2	CO 1	BT 1
1(h)	How is Enamel different from distempers?	2	CO 1	BT 1

**Section-B**

Q. No.	Answer any two of the following (Within 300 words each)	Marks	CO	BT Level
2 (a)	Illustrate the constituents of good bricks.	6	CO 2	BT 2
2 (b)	Classify bricks based on their composition, manufacturing processes, and intended applications.	6	CO 4	BT 4
2 (c)	Identify and elucidate the detailed functions of each ingredient in cement, highlighting how they collectively contribute to the properties and performance of the final product.	6	CO 3	BT 3

Q. No.	Answer any two of the following (Within 300 words each)	Marks	CO	BT Level
3 (a)	What are the requirements of a good mortar? Classify the typical proportions used for cement mortar in the construction industry?	3+4	CO 1 CO 4	BT 1 CO4
3 (b)	Explain Flakiness index and elongation index on coarse aggregate.	7	CO 2	BT 2
3 (c)	Explain the different types of tiles along with its manufacturing methods.	3+4	CO 2	BT 2

Q. No.	Answer any two of the following (Within 300 words each)	Marks	CO	BT Level
4 (a)	Explain the different types of cement that are used for construction of sewer lines, mega city road networks, underwater construction, extremely hot weather areas and architectural work.	7	CO 2	BT 2
4 (b)	Define Shrinkage of concrete. Also explain different types of shrinkage occur in concrete.	2+5	CO 2	BT 2
4 (c)	How do various methods of curing differ in their approach and effectiveness?	7	CO 1	BT 1

Q. No.	Answer any two of the following (Within 300 words each)	Marks	CO	BT Level
5 (a)	Construct a neat sketch of any five defects in timber. Identify the objectives of painting and point out the characteristics of an ideal painting.	2+5	CO 3	BT 3
5 (b)	Identify different methods of artificial seasoning of wood and the various constituents/ingredients of paint.	7	CO 3	BT 3
5 (c)	Classify different method of applying Stucco plastering, Laths plastering, Lime plastering, Cement plastering.	7	CO 4	BT 4

Course Outcomes	Marks Allotted	Percentage
CO1	22	Approx 60%
CO2	36	
CO3	22	Approx 22%
CO4	17	Approx 18%