

B.E./B.TECH. Degree Examination, December 2020

Third Semester

CE16305-CONSTRUCTION MATERIALS

(Regulation 2016)

Time: Three hours

Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. **The presence of which of the following constituent of brick prevents cracking, shrinkage and warping of raw brick:**
 - (a) Alumina
 - (b) Silica
 - (c) Oxide of iron
 - (d) Magnesia
2. **Test conducted on road aggregate to understand the toughness property is:**
 - (a) Los Angeles Abrasion Test
 - (b) Solubility Test
 - (c) Impact Test
 - (d) Compression Strength Test
3. **Separation of ingredients from concrete during transportation is called:**
 - (a) Bleeding
 - (b) Creep
 - (c) Segregation
 - (d) Shrinkage
4. **The carbon content in steel:**
 - (a) Decreases the ductility of steel
 - (b) Decreases the hardness of steel
 - (c) Increases the ductility of steel
 - (d) Increases the hardness of steel
5. Compare the term Mineralogy with Geology.
6. List the various tests on cement.
7. Infer the term Modulus of Rupture.
8. Classify the various steel sections available in the market.

PART B - (4 X16 = 64 marks)

09. (a) Calculate *Fineness Modulus*: **(16)**

Sieve size, mm	80	40	20	10	4.75	2.36	1.18	06	0.3	0.15
Weight Retained, g	0	0	100	350	25	15	10	0	0	0

Write your inference.

(OR)

- (b) Fit a line (*derive equation*) for the given data using Least Squares Method: **(16)**

% water absorption	2	4	6	8	10
Crushing Strength, N/mm ²	37	32	27	22	15

What will be the crushing strength, if the water absorption is 15%?

10. (a) Differentiate Los Angeles abrasion test and Deval attrition test on aggregates. Also explain Los Angeles abrasion test with neat sketch. **(16)**

(OR)

- (b) Draw the flow chart on manufacturing process of cement. Explain the manufacturing process briefly with neat sketch. **(16)**

11. (a) Relate the importance of various tests of fresh concrete during construction. **(16)**

(OR)

- (b) Distinguish between high strength concrete and high performance concrete. **(16)**

12. (a) List the common timber used in India. Enumerate details of any two timber varieties used in southern India. **(16)**

(OR)

- (b) Elaborate the different types of paints. Explain in detail about water proofing paint. **(16)**