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GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, May - 2021

(Eighth Semester)

BCEOE8033– MODERN CONSTRUCTION MATERIALS

(Civil Engineering)

Time: 2 hrs

Maximum: 50 Marks

Answer ALL Questions**The figures in the right hand margin indicate marks.****PART – A: (Multiple Choice Questions)****(1 x 10 = 10 Marks)****Q.1. Answer ALL questions**

- | | [CO#] | [PO#] |
|---|-------|-------|
| a. Workability of concrete can be improved by the addition of _____
(i) Iron
(ii) Sodium
(iii) Zinc
(iv) Sulphur | I | I |
| b. Workability of concrete can be improved by _____
(i) More sand
(ii) More cement
(iii) More fine aggregates
(iv) Fineness of coarse aggregate | I | I |
| c. What could be the possible answer among the following for compressive strength of high strength concrete?
(i) 10MPa
(ii) 20MPa
(iii) 30MPa
(iv) 40MPa | II | I |
| d. Due to low w/c ratio _____
(i) It doesn't cause any problems
(ii) It causes problems
(iii) Workability is easy
(iv) Strength is more | II | I |
| e. The cement concrete, from which entrained air and excess water are removed after placing it in position, is called _____
(i) Vacuum concrete
(ii) LWC
(iii) Prestressed concrete
(iv) Sawdust concrete | III | I |
| f. The removal of excess air after placing concrete helps in increasing the strength of concrete by _____
(i) 15-20%
(ii) 20-25%
(iii) 30-50%
(iv) 50-70% | III | I |
| g. Usually softer constituent of a composite is
(i) Matrix
(ii) Reinforcement
(iii) Both are of equal strength
(iv) Can't define | IV | I |
| h. Composite materials are classified based on:
(i) Type of matrix
(ii) Size-and-shape of reinforcement
(iii) Both
(iv) None | IV | I |
| i. If the creep effect is considered at a given load, the modulus determined is referred to as _____
(i) Short term modulus of elasticity
(ii) Elasticity
(iii) Long term modulus of elasticity
(iv) Creep effect | I | I |

- | | | |
|--|------------------------|---|
| j. Reduction in the volume due to shrinkage causes _____ | II | I |
| (i) Low volume | (ii) Volumetric strain | |
| (iii) Volumetric stress | (iv) W/c ratio | |

PART – B: (Short Answer Questions)

(2 x 5 = 10 Marks)

Q.2. Answer ALL questions

- | | [CO#] | [PO#] |
|---|-------|-------|
| a. Distinguish between lightweight concrete and lightweight aggregate concrete? | CO1 | I |
| b. List out the chemicals used in anti-corrosive coating? | CO2 | I |
| c. What is polymerization? | CO3 | I |
| d. Explain about the adhesives and sealants? | CO4 | I |
| e. Outline about the acid attack on concrete? | CO4 | I |

PART – C: (Long Answer Questions)

(6 x 5 = 30 Marks)

Answer ANY FIVE questions

- | | Marks | [CO#] | [PO#] |
|---|-------|-------|-------|
| 3. Discuss the main factors affecting the creep of concrete? | (6) | CO1 | I |
| 4. Discuss in detail the properties and advantages of high strength concrete? | (6) | CO1 | I |
| 5. Interpret the corrosion of steel in concrete subject to carbonation? | (6) | CO2 | I |
| 6. Determine the effects of sea water on concrete? | (6) | CO2 | I |
| 7. Explain the properties, application and advantages of fibre reinforced concrete? | (6) | CO3 | I |
| 8. Determine about the properties of fibre reinforced polymers? | (6) | CO3 | I |
| 9. Illustrate a note on Polymer concrete composites? | (6) | CO4 | I |
| 10. Interpret about the Fibre reinforced plastic in sandwich panels? | (6) | CO4 | I |

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