Code No: R100506

ADVANCED CONCRETE TECHNOLOGY

Time: 3 Hours   Max.Marks:100

Answer any FIVE questions
All questions carry equal marks
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1.a) Explain the Bogue equations and their limitations.
  b) What are the various mineral admixtures used in concrete and explain the advantages associated with their use in concrete.   [10+10]

2.a) Describe the alkali aggregate reaction and also the factors promoting the alkali aggregate reaction.
  b) Explain the aggregate grading curves and the influence of various grades of fine aggregate on the concrete.   [10+10]

3.a) Define workability and also the factors influencing the workability of concrete.
  b) Explain the maturity of concrete and its application.   [10+10]

4.a) Explain the various types of modulii of elasticity of concrete.
  b) Distinguish between creep and shrinkage of concrete. Explain the classification of shrinkage of concrete.   [10+10]

5.a) Explain the various elements of statistical quality control of concrete.
  b) Describe the different analysis techniques in quality management system.   [10+10]

6.a) Explain the concept and the factors influencing the concrete mix design.
  b) Explain the various aspects to obtain durable concrete structures.   [10+10]

7.   Explain the design considerations and the applications of the following:
     a) Fibre Reinforced Concrete
     b) Geo-Polymer Concrete.   [10+10]

8.   Explain the following:
     a) Gap graded aggregates and continuous grading
     b) Gel/Space ratio
     c) Mixing and setting times of concrete.   [8+6+6]

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