Code No: 07A50102 **R07** **Set No. 2**

III B.Tech I Semester Examinations,November 2010
CONCRETE TECHNOLOGY
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What is the influence of following on fresh concrete .
   (a) Fly ash.
   (b) GGBS
   (c) Silica fume. [16]
2. (a) What are the limitations of Schmidts rebound hammer?
   (b) State IS code provisions for stripping time for shuttering?
   (c) What are the tests for strength in compression? [4+4+8]
3. Define:
   (a) Segregation.
   (b) Bleeding.
   (c) What are the different methods of batching? Explain in detail. [4+4+8]
4. What are the steps involved in DOE method of concrete mix deign? [16]
5. (a) Classify different types of aggregate and on what bases they can be classified?
   (b) What are the factors to be considered during the study of aggregates?
   (c) Categorize different aggregates based on their size? [3+10+3]
6. (a) What are the effects of de-icing agents?
   (b) What is the influence of blended cement on corrosion?
   (c) What are the factors influencing corrosion; how can we stop corrosion?[4+4+8]
7. What are the effects of Fly ash on fresh concrete, hardened concrete and durability of Concrete. [16]
8. (a) What is the influence of early temperature on strength of concrete?
   (b) What is steam curing of concrete?
   (c) What is Autoclaving?
   (d) Write about Thermal properties of concrete. [4+4+4+4]

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Code No: 07A50102 **R07** **Set No. 4**

III B.Tech I Semester Examinations,November 2010
CONCRETE TECHNOLOGY
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the problems of delayed curing.
   (b) What happens when unsound materials are used in concrete preparation?
   (c) What happens when concrete is subjected to high temperature. [5+5+6]
2. (a) What are the field tests of cement?
   (b) What is the other name of plasticizer? Mention the advantages? [3+13]
3. What are the different tests involved in measurement of workability. Explain in detail. [16]
4. (a) Explain the effects of aggregate to cement ratio and cement content on the strength of concrete.
   (b) Define Gel-Space ratio in concrete.
   (c) How does the shape of aggregate particles affect properties of fresh concrete. [10+3+3]
5. (a) What is Accelerated- curing test.
   (b) What are the tests on the composition of hardened concrete. [6+10]
6. (a) What is fiber reinforced concrete and what are the different fibers used?
   (b) Define aspect ratio of fibres?
   (c) Where fibre shot concrete is used? Explain. [8+4+4]
7. (a) Sketch a typical stress-strain curve of concrete and show how to find the Modulus of elasticity of concrete from this curve.
   (b) What is maturity of concrete cured at 30 degrees for 14 days?
   (c) What is Youngs Modulus and Modulus of rupture for M-30 grade of concrete as per IS 456-2000.
   (d) What are the elastic properties of concrete? [4+4+4+4]
8. (a) What is ultra high strength concrete? What are the techniques for producing ultra high strength concrete?
   (b) What is high performance concrete and what are the aggregate used for HPC. [8+8]

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Code No: 07A50102 **R07** **Set No. 1**

III B.Tech I Semester Examinations,November 2010
CONCRETE TECHNOLOGY
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Bring out the differences between normal and high strength concrete with respect to stress strain behaviour.
   (b) Explain the term curing efficiency?
   (c) What are the different types of compaction? [4+4+8]
2. (a) What is glass fibred reinforced concrete?
   (b) Write in detail about the types of FRC?
   (c) What is recycled aggregate concrete; explain various properties of the same? [4+4+8]
3. (a) Differentiate design mix from normal mix.
   (b) How durability of concrete can be improved with the use of silica fume and fly ash.
   (c) What is ready mix concrete? [4+9+3]
4. (a) What is relation between Modulus of elasticity and strength?
   (b) What are the factors affecting Modulus of elasticity.
   (c) What is Dynamic Modulus of Elasticity. [4+4+8]
5. (a) What are the thermal properties involved in quality of aggregate for concrete construction.
   (b) What is grading of aggregate. Explain in detail. [8+8]
6. (a) Mention the situation where hydrophobic cement is used?
   (b) Mention any two cement composites and what properties of concrete is improved with these composites?
   (c) What is slump loss and what are the steps for reducing slump loss? [3+3+10]
7. (a) What is the influence of size of specimen on strength?
   (b) Write the relation of core strength to strength in situ.
   (c) How does rate of application of load influence on strength? [6+4+6]
8. (a) Discuss the various tests applicable to concrete at different levels of workability.
   (b) Discuss briefly the different methods of compacting concrete. [6+10]

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Code No: 07A50102 **R07** **Set No. 3**

III B.Tech I Semester Examinations,November 2010
CONCRETE TECHNOLOGY
Civil Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What is Bond of aggregates?
   (b) What is strength of aggregate.
   (c) What are the different mechanical properties of aggregate.
   (d) What is the porosity and absorption of aggregate. [4+4+4+4]
2. (a) What is permeability of concrete?
   (b) What is drying shrinkage and thermal shrinkage of concrete? [4+12]
3. (a) Differentiate high strength concrete from high performance concrete.
   (b) Write short notes on:
      i. Self consolidated concrete
      ii. Fly ash concrete.
      iii. High alumina concrete. [4+12]
4. (a) How you will measure creep and what is the relation between creep and time.
   (b) What are the factors affecting creep? explain. [8+8]
5. (a) What is accelerated curing test?
   (b) What is the effect of maximum size of aggregate on strength?
   (c) What is the relation between compressive and tensile strength? [5+5+6]
6. (a) List out the factors effecting strength of concrete?
   (b) Explain the short term and long term properties of concrete .
   (c) What are the effects of hot weather on hardened concrete? [2+10+4]
7. What are super plasticizers? How will you classify them and what are the effects of super plasticizer on fresh concrete? [16]
8. (a) What is under water concreting.
   (b) Discuss the factors affecting consistency of concrete.
   (c) What is meant by degree of workability. [6+6+4]

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