

Code No: RT22015

R13**SET - 1**

II B. Tech II Semester Regular Examinations, April/May – 2016
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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**PART -A**

1. a) What is alkali aggregate reaction? (4M)
- b) What is segregation and bleeding? (4M)
- c) What is water cement ratio and Abram's law? (4M)
- d) What is creep of concrete? (3M)
- e) What is durability of concrete? (3M)
- f) What is FRC? What are the different types of fibres? (4M)

**PART -B**

2. a) Write about retarders, accelerators and plasticizers. (8M)
- b) Write about gap graded and well graded aggregate. (8M)
3. a) Define workability. What are the different methods for measuring the workability? (10M)
- b) What are the different steps in the manufacture of concrete? (6M)
4. a) What are the different tests of hardened concrete? (10M)
- b) What are the factors affecting the strength? (6M)
5. a) What is the relation between creep and time of concrete? (8M)
- b) What are the different types of shrinkage? (8M)
6. Design a concrete mix for characteristic strength of 30MPa at 28 days with a standard deviation of 4MPa. The specific gravity of FA and CA are 2.60 and 2.70 respectively. A slump of 50mm is necessary. The specific gravity of cement is 3.15. Assuming the necessary data design the mix as per IS code method. (16M)
7. Write about (16M)
  - (a) Light weight aggregate concrete
  - (b) Self consolidating concrete
  - (c) Nofines concrete

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**R13****SET - 2**

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Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
 2. Answer **ALL** the question in **Part-A**  
 3. Answer any **THREE** Questions from **Part-B**

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PART -A

1. a) What are the different types of tests for finding the physical properties of cement? (4M)
- b) What is shotcrete concrete? (3M)
- c) What is maturity concept? (4M)
- d) What is the modulus of elasticity and dynamic elasticity of concrete? (4M)
- e) What is the quality control of concrete? (3M)
- f) What are the different types of polymer concretes? (4M)

PART -B

2. a) Write about bulking of aggregate and soundness of aggregate. (8M)
- b) What are the different types of admixture? Write about flyash and silica fume, (8M)
3. a) Define workability and what are the factors affecting workability? (8M)
- b) What are the steps in the manufacture of concrete? (8M)
4. a) What is the relation between compressive strength and tensile strength of concrete? (10M)
- b) What are the different NDT tests? (6M)
5. a) What is creep of concrete and what are the factors affecting creep? (10M)
- b) What are the different factors affecting shrinkage of concrete? (6M)
6. Design a concrete mix for characteristic strength of 35MPa at 28 days with a standard deviation of 4MPa. The specific gravity of FA and CA are 2.65 and 2.75 respectively. A slump of 40mm is necessary. The specific gravity of cement is 3.15. Assuming the necessary data design the mix as per IS code method. (16M)
7. Write about (16M)
 - (a) High density concrete
 - (b) Self healing concrete
 - (c) No fines concrete

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R13**SET - 3**

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 (Civil Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **THREE** Questions from **Part-B**

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**PART –A**

1. a) What is setting time of cement and how is it found practically? (4M)
- b) What is curing of concrete? (3M)
- c) What is gel space ratio? (3M)
- d) What is creep of concrete? What are the factors affecting creep? (4M)
- e) What are the acceptance criteria for a mix design? (4M)
- f) What is fibre reinforced concrete? (4M)

**PART –B**

2. a) What is the effect of particle shape and texture on the strength of the aggregate? (8M)
- b) What are admixtures? Write about chemical admixtures and mineral admixtures. (8M)
3. a) What is segregation and bleeding of concrete? (6M)
- b) What are the factors effecting workability? (10M)
4. a) Write about split tensile strength and flexural strength of concrete? (8M)
- b) What are the different NDT tests? What are the codal provisions? (8M)
5. a) What is the relation between creep and time? (8M)
- b) What are the factors affecting creep of concrete? (8M)
6. Design a concrete mix for characteristic strength of 25MPa at 28 days with a standard deviation of 4MPa. The specific gravity of FA and CA are 2.62 and 2.74 respectively. A slump of 40mm is necessary. The specific gravity of cement is 3.12. Assuming the necessary data design the mix as per IS code method. (16M)
7. Write about (16M)
  - (a) High performance concrete
  - (b) Self compacting concrete
  - (c) SIFCON

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**R13****SET - 4**

**II B. Tech I Semester Regular Examinations, April/May – 2016**  
**CONCRETE TECHNOLOGY**  
(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)  
2. Answer **ALL** the question in **Part-A**  
3. Answer any **THREE** Questions from **Part-B**

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PART -A

1. a) What are the thermal properties of aggregates? (3M)
- b) What is ready mixed concrete? (4M)
- c) What is water cement ratio? (4M)
- d) Write about Poisson's ratio of concrete. (3M)
- e) What are the different factors in the choice of mix proportions? (4M)
- f) What is shotcrete concrete? (4M)

PART -B

2. a) Write about bulk density and moisture absorption of aggregates? (8M)
- b) What are different types of cement? What is hydration of cement? (8M)
3. a) What are the properties of fresh concrete? What are the different tests of workability? (12M)
- b) Write about water used in concrete? (4M)
4. What the different tests are of hardened of concrete? Explain in detail. (16M)
5. Write about elasticity, creep and shrinkage of concrete. (16M)
6. Design a concrete mix for characteristic strength of 30MPa at 28 days with a standard deviation of 4MPa. The specific gravity of FA and CA are 2.65 and 2.75 respectively. A slump of 60mm is necessary. The specific gravity of cement is 3.15. Assuming the necessary data design the mix as per IS code method. (16M)
7. Write about (16M)
 - (a) High Density concrete
 - (b) Self compacting concrete
 - (c) Cellular concrete.