Code No: **R31013**   **R10**   Set No. 1

III B.Tech I Semester Supplementary Examinations, June - 2015
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1	a)	What are the different types of cements? Write about any two in detail.	[8]
	b)	What are the different types of admixtures? Write about performance of GGBS in concrete.	[7]
2	a)	What are the different tests of mechanical properties of aggregates?	[7]
	b)	What is bulking of aggregates? Write about gap graded and well graded aggregates.	[8]
3	a)	Write the steps involved in the manufacture of concrete.	[8]
	b)	What is the effect of time and temperature on workability?	[7]
4	a)	What is the relation between compression strength and tensile strength?	[7]
	b)	Write about water-cement ratio and Abram's law.	[8]
5	a)	What are different NDT methods? Write codal provisions for NDT.	[10]
	b)	Write the factors affecting the strength of concrete.	[5]
6		Define shrinkage. Write in detail the classification of shrinkage.	[15]

7   Design a concrete mix of M30 grade. Take a standard deviation of 5MPa. The specific   [15]
gravities of coarse aggregate and fine aggregate are 2.8 and 2.7 respectively. The bulk
density of coarse aggregate is 1600 kg/m^3 and fineness modulus of fine aggregate is 2.70.
A slump of 60mm is necessary. The water absorption of coarse aggregate is 2% and free
moisture in fine aggregate is 1%.Design the mix by using IS code method.

8	a)	Write about the following	[4]
		(a) No-fines concrete	[4]
		(b) High density concrete	[4]
		(c) Light weight aggregate concrete	[3]
		(d) SIFCON	

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Code No: **R31013**   **R10**   Set No. 2

III B.Tech I Semester Supplementary Examinations, May/June - 2015
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
*****

1	a)	What are the different tests on cements? Write in detail.	[9]
	b)	Write in detail about accelerators and retarders.	[6]
2	a)	Write in detail about size, shape, strength and durability of aggregate?	[10]
	b)	Write about alkali aggregate reaction.	[15]
3		Define workability. Write the tests to measure workability.	[15]
4	a)	Write about gel space ratio and gain of strength of concrete with age? [	[8]
	b)	Write about accelerated curing test.	[7]
5	a)	What are different NDT methods? Write codal provisions for NDT.	[10]
	b)	What is curing of concrete?	[5]
6	a)	Define elasticity, creep and shrinkage.	[7]
	b)	What is the relation between modulus of elasticity and strength?	[8]

7   Design a concrete mix of M35 grade. Take a standard deviation of 5MPa. The   [15]
specific gravities of coarse aggregate and fine aggregate are 2.8 and 2.7 respectively.
The bulk density of coarse aggregate is 1600 kg/m^3 and fineness modulus of fine
aggregate is 2.70. A slump of 60mm is necessary. The water absorption of coarse
aggregate is 2% and free moisture in fine aggregate is 1%.Design the mix by using IS
code method.

8   Write about the following   [4]
(a)   No-fines concrete   [4]
(b)   High performance concrete   [4]
(c)   cellular concrete   [3]
(d)   SCC

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Code No: **R31013**   **R10**   Set No. 3

III B.Tech I Semester Supplementary Examinations, May/June - 2015
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
*****

1	a)	What are the different grades of cements? Write about tests of physical properties of cement in detail.	[8]
	b)	What are the different types of admixtures? Write about fly ash and silica fume.	[7]
2	a)	Write in detail about specific gravity, bulk density, porosity and moisture content of aggregate?	[7]
	b)	What is bulking of aggregates? Write about gap graded and well graded aggregate.	[8]
3		Define workability. What are the factors effecting the workability.	[15]
4	a)	What is the relation between compression strength and tensile strength?	[7]
	b)	Write about the maturity concept of concrete.	[8]
5	a)	Write the testing procedure of determination of flexural strength.	[10]
	b)	Write the factors affecting the strength of concrete.	[5]
6		Define shrinkage. Write in detail the classification of shrinkage.	[15]
7		Design a concrete mix of M40 grade. Take a standard deviation of 5MPa.The specific gravities of coarse aggregate and fine aggregate are 2.85 and 2.75 respectively. The bulk density of coarse aggregate is 1600 kg/m^3 and fineness modulus of fine aggregate is 2.70. A slump of 60mm is necessary. The water absorption of coarse aggregate is 2% and free moisture in fine aggregate is 1%. Design the mix by using IS code method.	[15]
8		Write about fibre reinforced concrete and the factors affecting the properties of FRC.	[15]

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Code No: **R31013**   **R10**   **Set No. 4**

III B.Tech I Semester Supplementary Examinations, May/June - 2015
CONCRETE TECHNOLOGY
(Civil Engineering)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1	a)	What are the different grades of cements? Write the tests of soundness and fineness of cement.	[8]
	b)	What are the different types of admixtures? Write about plasticisers and super plasticisers.	[7]
2	a)	What are the different tests of mechanical properties of aggregates?	[7]
	b)	What is bulking of aggregates? Write about grading curves.	[8]
3		Define workability. Write about segregation and bleeding.	[15]
4	a)	What is the relation between compression strength and tensile strength?	[7]
	b)	Write about quality of mixing water in concrete.	[8]
5	a)	Write the testing procedure of determination of tensile strength.	[10]
	b)	Write the factors affecting the strength of concrete.	[5]
6		Define creep of concrete. Write the factors influencing creep, relation between creep and time and effect of creep.	[15]
7		Design a concrete mix of M45 grade. Take a standard deviation of 5MPa. The specific gravities of coarse aggregate and fine aggregate are 2.85 and 2.75 respectively. The bulk density of coarse aggregate is 1600 kg/m^3 and fineness modulus of fine aggregate is 2.70. A slump of 60mm is necessary. The water absorption of coarse aggregate is 2% and free moisture in fine aggregate is 1%.Design the mix by using IS code method.	[15]
8		Write about the following	
		(a) Polymer concrete	[4]
		(b) Ready mixture concrete	[4]
		(c) Shotcrete	[4]
		(d) Self healing concrete	[3]

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