Code No: 115EP

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech III Year I Semester Examinations, February/March - 2016
CONCRETE TECHNOLOGY
(Common to CE, CEE)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

Part- A

(25 Marks)

1.a) What is the role of calcium silicates in the hydration process of cement? [2]
b) Explain about surface acting admixtures. [3]
c) Write about the pan type of mixers. [2]
d) Explain about LAITANCE. [3]
e) What are different types of static modulus of elasticity? [2]
f) What is the relation between creep and time? [3]
g) How bulking of sand is corrected in field mixes? [2]
h) What is entrapped air? How it is accounted in concrete mix design? [3]
i) What is no fines concrete? [2]
j) Explain about cellular concrete? [3]

Part-B

(50 Marks)

2.a) Explain about set controlling admixtures?
b) What is alkali aggregate reaction? What factors promote alkali aggregate reaction and how it can be controlled? [5+5]

OR

3.a) Explain the method of determining the fineness of cement by surface area method?
b) Explain the shape tests on aggregate? [5+5]

4.a) Explain in detail about bleeding and segregation of concrete? How it can be controlled?
b) Explain slump test on fresh concrete and the recommended slump values for different work abilities? [5+5]

OR

5.a) Discuss about the quality of mixing water in concrete as per IS code provisions?
b) Explain the steps in manufacture of concrete in sequential order? [5+5]

6.a) Calculate the Gel/Space ratio and hence estimate the 28 day strength for one bag of cement with 0.55 W/C ratio at 75% hydration?
b) Explain the creep behavior of concrete with the help of a creep curve? [5+5]

OR

7.a) Explain the ultrasonic pulse velocity method of non destructive testing ?
b) Explain the relation between the compressive and tensile strength of concrete? [5+5]

8.a) Explain the stepwise procedure of designing pumpable concrete as per BIS method?
b) Discuss factors to be considered for durable concrete? [5+5]

OR

9.a) Explain features of statistical quality control?
b) Discuss the acceptance criteria for concrete as per IS 456-2000? [5+5]

10.a) Explain various methods of producing light weight concrete?
b) Explain about polymer impregnated concrete? [5+5]

OR

11.a) Differentiate between RCC and FRC? Discuss about the effect of aspect ratio on the properties of FRC?
b) Explain any one test on finding fresh properties of self compacting concrete? [5+5]

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