Resister No: …….

B.E DEGREE EXAMINATIONS MAY / JUNE 2013

Seventh Semester

CIVIL ENGINEERING

CEE123: Concrete Technology

(Assume suitable data if not mentioned)

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The strength of concrete mainly depends onS
   a) Fineness of cement b) Quality of fine aggregates
   c) Proper proportioning of aggregates d) Water cement ratio
2. Soundness test of cement by Le-Chatelier's apparatus given unsoundness due to
   a) Free lime only b) Magnesia only
   c) Both free lime and magnesia d) Gypsum
3. Increase in fineness modulus of aggregate indicate
   a) Finer grading b) coarser grading c) Gap grading d) Even grading
4. The quality of cement is tested by
   a) Compressive strength b) Tensile strength
   c) Bond strength d) Shear strength
5. Which of the following acts as accelerator for concrete
   a) Potassium chlorate b) Calcium chloride c) Lime d) Copper sulphate
6. In a day $50m^3$ of concrete is being placed. How many cubes should be taken for testing of concrete
   a) 3 b) 6 c) 8 d) 15
7. The fineness modulus of fine aggregate is in the range of
   a) 2 to 3.5 b) 3.5 to 5 c) 5 to 7 d) 7 to 10
8. 1% of voids in a concrete mix would reduce its strength by about
   a) 5% b) 30% c) 20% d) 15%
9. If sea water is used for preparing concrete
   a) Produces efflorescence b) Corrode the reinforcement
   c) Cause dampness d) All the above

10. The total insoluble residue in cement is restricted to

a) 0.015 percent b) 0.15 percent c) 0.05 percent d) 1.5 percent

PART B (10 x 2 = 20 Marks)

11. Mention standard consistency of cement
12. What is the effect of shape of aggregate on concrete workability?
13. Mention the desirable quality of water used for mixing of concrete
14. Name any two commercially available plasticizers cum viscosity modifying agents
15. Sketch the effect of water cement ratio on the strength of a concrete mix
16. What is the advantage of weigh batching over volume batching?
17. What is mean by workability of concrete?
18. List out the factors affecting the shrinkage of concrete
19. How would you do sampling in massive concreting work?
20. Where the light weight concrete is used

PART C (5 x 14 = 70 Marks)

21. a) Write Bogue's compound and mention their role during hydration.

(OR)

b) Explain grading of aggregate and draw the pattern of standard grading

22. a) Explain aggregate crushing test and abrasion test

(OR)

b) Explain initial and final setting time of cement determined in laboratory

23. a) Design a concrete mix by IS method. The characteristic strength of concrete is 30MPa at 28 days measurement. Take standard deviation as 4. The specific gravity of FA cement and CA are 2.56 and 2.7 respectively, Compacting factor as 0.90, type of exposure is mild, size of aggregate is 20mm, water absorption of C.A and F.A are 0.5% and 1.0% respectively, free surface moisture of C.A is Nil and F.A is 2.0%

(OR)

b) (i) How curing condition influence the strength of concrete? What are the methods of curing? (7)

(ii) Define bleeding and segregation and explain how bleeding of concrete is measured (7)

24. a) Explain compacting factor test with neat sketch

(OR)

b) Explain split tensile test with stress distribution diagram

25. a) (i) What are air-entraining agents? Explain the factors affecting the moment of air entertainment (8)

(ii) Explain the factors affecting shrinkage of concrete (6)

(OR)

b) Writ short notes on

(i) Ready mixed concrete (5)

(ii) High performance concrete (5)

(iii) Self compacting concrete (4)

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