KUMARAGURU
college of technology
character is life

Register Number: …….

B.E DEGREE EXAMINATIONS: APRIL 2015

(Regulation 2009)

Seventh Semester

CIVIL ENGINEERING

CEE123: Concrete Technology

(Use of IS 456, IS 10262 and ACI codes are permitted)

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

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Which of the ingredient imparts soundness to cement?

   a) Alumina b) Magnesia

   c) Sulphur d) Iron Oxide

2. The percentage of salinity in sea water is,

   a) 5.0 b) 5.5

   c) 3.5 d) 50.0

3. For M20 grade of concrete, the standard deviation as per IS 456:2000 is.

   a) 5 N/mm^2 b) 4 N/mm^2

   c) 1.5 N/mm^2 d) 2.5 N/mm^2

4. In a day 50 m^3 of concrete is being placed. How many cubes should be taken for testing of concrete?

   a) 6 b) 5

   c) 12 d) 15

5. To produce dense and impermeable concrete, requirement of w/c ratio is

   a) High b) Moderate

   c) Low d) Very low

6. What is the result of using high quantity of cement?

a) Greater cracking
b) High permeability
c) Lesser cracking
d) High durability

7. What is the tolerable concentration of turbidity limit in water for making concrete?
a) 1000 ppm
b) 2000 ppm
c) 1500 ppm
d) 2500 ppm

8. The temperature at which concrete fails is
a) 100 deg C
b) > 900 deg C
c) 500 deg C
d) > 500 deg C

9. Self-compacting concrete (SCC) is a concrete mixture that is able to
a) Set easily
b) Compact under vibration
c) Consolidate of its own
d) Segregate

10. Use of Polymer concrete
a) Reduces porosity
b) Increases compressive strength
c) Increases porosity
d) Decreases compressive strength

PART B (10 x 2 = 20 Marks)

11. List out the Bogue's components.
12. Classify the aggregate types.
13. What are the factors influencing mix of proportions.
14. Compare accelerators and retarders.
15. List the tests on fresh concrete.
16. What is the importance of quality control?
17. What is the reason for the permeability of concrete in structures?
18. What are the types of air entraining agents?
19. What is a resin concrete?
20. Compare high strength concrete and high performance concrete.

PART C (5 x 14 = 70 Marks)

21. a) What is setting time? Explain setting time test with a neat sketch. Mention the IS specifications for initial and final setting time.

(OR)

b) List and explain the types of cement, composition, properties & uses.

22. a) Write the step by step procedure for concrete mix design as per Indian standards with example.

(OR)

b) How corrosion is induced in concrete? Explain the various methods to prevent corrosion with neat sketches.

23. a) What is workability of concrete? Explain the tests to be conducted to determine the workability.

(OR)

b) Explain about the acceptance & rejection criteria in quality control.

24. a) What is the quality of water recommended for concrete? Explain the effect of concrete in marine atmosphere.

(OR)

b) (i) Explain air entrained concrete. (7)

(ii) List and explain the various chemical attacks on concrete. (7)

25. a) (i) Explain Ready mixed concrete. (7)

(ii) Explain Light weight concrete. (7)

(OR)

b) (i) Explain fibre reinforced concrete. (7)

(ii) Explain Geopolymer concrete. (7)

****