

Register Number.....

B.E. DEGREE EXAMINATIONS: NOV/DEC 2012

Seventh Semester

CIVIL ENGINEERING

CEE123: Concrete Technology

(Assume suitable data if not mentioned)

Time: Three Hours

Maximum Marks: 100

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. The initial setting time of quick setting cement is nearly
 - a) One minute
 - b) Five minute
 - c) 30 minute
 - d) 60 minute
2. The quality of cement is tested by
 - a) Compressive strength
 - b) Tensile strength
 - c) Bond strength
 - d) None of these
3. Low heat cement is used in
 - a) Under water structure
 - b) Thick structure
 - c) Thin structure
 - d) Prestressed concrete works
4. Water cement ratio by weight is
 - a) Higher as compared to that by volume
 - b) Lower as compared to that by volume
 - c) Same as that by volume
 - d) None of the above
5. Shrinkage in concrete can be reduced by
 - a) Using low water cement ratio
 - b) Using suitable aggregate
 - b) Using tight and non-absorbent form work
 - d) All of the above
6. The diameter of needle used in vicat's apparatus for the determination of initial setting time is prescribed as
 - a) 0.5mm
 - b) 1 mm
 - c) 2mm
 - d) 5mm

7. If water cement ratio is 0.7 by weight, then the quantity of water required in concrete while using one full bag will be
- a) 10kg b) 20kg c) 35kg d) 50kg
8. Which type of vibrator is generally used in concrete work
- a) surface vibrator b) screen vibrator c) Needle vibrator d) None of the above
9. In order to have segregation in concrete, its dropping height should not be less than
- a) 25cm b) 75cm c) 100cm d) 150cm
10. For finding compressive strength of concrete, the minimum number of concrete cubes required
- a) 3 b) 6 c) 9 d) 12

PART B (10 x 2 = 20 Marks)

11. Mention the properties and uses of quick setting cement
12. Define the term flakiness Index.
13. Why sea water should not be used in concrete
14. Under what circumstances accelerators are added in concrete
15. What are the factors to be considered while specifying a concrete mix
16. What are the different methods of curing
17. What are the factors which influence the workability of concrete
18. Give the relationship between modulus of elasticity of concrete and strength of concrete as per IS456-2000
19. How the average design strength can be calculated for the specified minimum strength
20. Name the types of polymer concrete materials.

PART C (5 x 14 = 70 Marks)

21. a) How would you conduct the aggregate crushing value and impact value test? What is the acceptance criteria as per BIS?

(OR)

b) Explain the contribution of BOGUE's compounds to the various properties of cement.

22. a) what are the different types of mixers used to mix concrete? Explain in detail

(OR)

b) Design a concrete mix of M25 using IS method for the following data;

Standard deviation	:	4 N/sq.mm
Specific gravity of CA	:	2.65
Specific gravity of FA	:	2.65
Specific gravity of cement	:	3.15
Fineness modulus of FA	:	2.8
Slump required	:	25mm
Degree of workability	:	090 compacting factor
Type of exposure	:	Mild
Assume any other data if necessary		

23. a) Explain the terms segregation and bleeding? How segregation and bleeding of concrete can be measured

(OR)

b) Name the workability tests conducted for testing fresh concrete. Explain any three in detail

24. a) Comment on the thermal properties of concrete

(OR)

b) What impurities present in water affect the quality of concrete?

25. a) Explain the manufactures, properties and applications of (i) Polymer impregnated concrete and (ii) Ferrocement

(OR)

b) Write short notes on (i) Light weight concrete and (ii) Fiber reinforced concrete.
