16/11/13

Roll No. | | | | | | | | | | |

ANNA UNIVERSITY :: CHENNAI

(UNIVERSITY DEPARTMENTS)

B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013

CIVIL ENGINEERING

Third Semester

CE 8301 – CONSTRUCTION TECHNIQUES AND PRACTICES

(Regulation 2012)

PART-A (10 x 2 = 20 Marks)

1. How do you classify concrete based on compressive strength?
2. What is the indication of shear slump and collapse slump in slump tests?
3. State the precautions to be taken before removing the forms.
4. What are the types of bonds to be adopted in brick masonry?
5. What are the factors that should be considered in the selection of a type of flooring?
6. How will you protect the building from termite attack?
7. Define (a) Repair and (b) Rehabilitation.
8. What are the commonly used materials for repairing of concrete works?
9. List any four operations that can be performed by a bull dozer.
10. What are the general factors to be considered for the selection of any construction equipment?

Part –B (5 x16 = 80 Marks)

11. Design a concrete mix by BIS method with the following data :

    Characteristic compressive strength = 40 N/mm^2

    Maximum nominal size of aggregate = 20 mm (angular)

Fine aggregates confirm to grading Zone I

Degree of workability (slump)			= 100 mm
Degree of quality control			good
Type of exposure			Severe
Specific gravity of cement			3.15
Specific gravity of fine aggregate			2.74
Specific gravity of coarse aggregate			2.74
Water absorption	(i)	Coarse aggregate	nil
	(ii)	Fine aggregate	1.0%

Given:

Standard deviation (Table 1, IS10262:2009)	5 N/mm^2
Maximum water cement ratio (Table 5, IS456:2000)	0.45
Maximum water content per cubic metre of concrete for 25 to 50 mm slump	186 lit
Minimum cement content (Table 5 : IS456)	320 kg/m^3
Volume of coarse aggregate per unit volume of total aggregate for Zone I grading	0.60

Assume any other data if necessary.

12 (a) (i) Explain double scaffolding and suspended scaffolding with sketches. (8)

(ii) Explain with sketches, any two methods to prevent dampness. (8)

OR

12(b) How will you classify the stone masonry based on the arrangement of the stones in the construction? Explain any five types of ashlar masonry.

13(a) Describe the various acoustic defects that may be found in auditorium and suggest the remedial measures.

OR

13(b) (i) Elaborate on the general considerations and rules for ventilation in buildings. (10)

(ii) What are the constituents of oil paints? (6)

14(a) Explain clearly the causes of distress in concrete structures. Also describe in detail the techniques in repairing damages in buildings.

OR

14(b) Give a brief account of the effectiveness of different materials used for repairing the cracks in concrete structures.

15(a) (i) What is the operating principle of a power shovel? What are the factors which affect the output of a power shovel? (10)

(ii) Describe the various applications of a bulldozer. (6)

OR

15(b) Elaborately discuss the various material handling equipments (any Four) and discuss their specific purpose in detail.