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[4857]-1008

S.E. (Civil Engineering) (Second Semester) EXAMINATION, 2015

CONCRETE TECHNOLOGY

(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6 and Q. No. 7 or Q. No. 8.

(ii) Neat diagrams must be drawn wherever necessary.

(iii) Figures to the right indicate full marks.

(iv) Your answers will be valued as a whole.

(v) Use of electronic pocket calculator is allowed.

(vi) Assume suitable data, if necessary.

(vii) Use of IS code 10262, 456 is not allowed.

1. (a) Enlist the basic ingredients of Portland Cement and also state their ill-effects if used in excess. [6]

(b) Define workability. State and explain the factors affecting workability. [6]

Or

2. (a) Enumerate the different tests carried on aggregates. State the significance and procedure of aggregate crushing value test. [6]

(b) Write a short note on shrinkage and its different types. [6]

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3. (a) State the various types of non-destructive tests carried on hardened concrete. Explain “Rebound Hammer test with its limitation”. [6]
- (b) State and explain various operations involved during the concreting from mixing to finishing of concrete surface. [6]

Or

4. (a) Write short notes on : [6]
- (i) Fiber reinforced concrete
- (ii) Self-compacting concrete.
- (b) Write the comparison between Ferro cement and RCC construction work. [6]
5. (a) Briefly outline the IS code method of concrete mix design. Write the procedure of trial mixes. [7]
- (b) What do you mean by nominal mix, standard mix and design mix ? [6]

Or

6. (a) Explain the factors affecting mix design. [4]
- (b) What do you mean by : [4]
- (i) Mean strength
- (ii) Variance
- (iii) Standard deviation
- (iv) Coefficient of variation.
- (c) Explain DOE method of mix design in brief. 5

7. (a) What is durability of concrete ? What is significance of durability ?
What effect of w/c ratio makes on durability ? [8]
- (b) What is evaluation of crack ? Why is it necessary ? [5]

Or

8. (a) Write detailed notes on : [8]
- (i) Attack by sea water
- (ii) Chloride attack on concrete.
- (b) Explain process of preparation of surface for repairs along with its importance. [5]