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[5252]-108

S.E. (Civil Engineering) (Second Semester) EXAMINATION, 2017
CONCRETE TECHNOLOGY
(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Answer Q. 1 or 2, Q. 3 or 4, Q. 5 or 6, Q. 7 or 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) Which are the field tests to be carried out on cement ?
[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) What are the factors affecting strength of concrete ? [6]

P.T.O.

3. (a) State the various types of non-destructive tests carried on hardened concrete. Explain "Rebound hammer test with its limitations". [6]
- (b) Describe the different types of vibrators used for compaction of concrete. [6]

Or

4. (a) Write short notes on : [6]
- (i) Fiber reinforced concrete
- (ii) Self compacting concrete.
- (b) Define Ferrocement. Explain the basic concepts in forming ferrocement composition used in the construction industry. [6]

5. (a) What do you mean by nominal mix, standard mix and design mix ? [6]
- (b) Explain mix design by IS recommended guidelines in detail. Write the procedure of standard mixes. [7]

Or

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

7. (a) State and explain the factors affecting permeability of concrete. What measures should be taken to reduce permeability of concrete ? [5]
- (b) Write short notes on :
- (i) Evaluation of crack
- (ii) Selection of repair procedure. [8]

Or

8. (a) Explain the process of preparation of surface for repairs along with its importance. [5]
- (b) Write short notes on : [8]
- (i) Carbonation of concrete
- (ii) Retrofitting by FRP.