Total No. of Questions—**8**] [Total No. of Printed Pages—**3**

Seat No.	

[5057]-206

S.E (Civil Engineering) (Second Semester) EXAMINATION, 2016

CONCRETE TECHNOLOGY

(2012 PATTERN)

Time : Two Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Answer Q. **1** or Q. **2**, Q. **3** or Q. **4**, Q. **5** or Q. **6** and Q. **7** or Q. **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*) What are the minor compounds in Portland Cement ? What is their role ? [6]

(*b*) Explain in detail importance of compaction of concrete. What are the different methods of compaction ? [6]

Or

2. (*a*) What is bulking of sand and its effect on batching ? [6]

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

P.T.O.

3. (*a*) State the various types of destructive tests carried on hardened concrete. Explain "Flexural Test". [6]

(*b*) Write short notes on : [6]

(*i*) Under water concreting

(*ii*) Cold weather concreting.

Or

4. (*a*) Write short notes on : [6]

(*i*) High density concrete

(*ii*) Self compacting concrete.

(*b*) Define Ferrocement. What are the properties and specifications of ferrocement materials used in the construction industry ? [6]

5. (*a*) What do you mean by nominal mix standard mix and design mix ? [6]

(*b*) Briefly outline the IS code method of concrete mix design. Write the procedure of standard mixes. [7]

Or

6. (*a*) Write major factors affecting mix design. Explain water-cement ratio. [4]

(*b*) What do you mean by : [4]

(*i*) Mean strength

(*ii*) Variance

(*iii*) Standard Deviation

(*iv*) Coefficient of variation.

(*c*) Explain the DOE method of mix design in brief. [5]

7. (*a*) What are the factors contributing cracks in the concrete ? [5]

(*b*) What is durability ? What is significance of durability ? What effect of w/c ratio makes on durability ? [8]

Or

8. (*a*) Write a short note on "Retrofitting by FRP". [5]

(*b*) What is effect of permeability on concrete ? What measures should be taken to reduce permeability of concrete ? [8]