



COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Government of Maharashtra.)
SHIVAJI NAGAR, PUNE - 411 005

END Semester Examination (CE-205) Concrete Technology

Course: B.Tech

Branch: Civil Engineering

Semester: Sem III

Year: 2014-2015

Max.Marks:60

Duration: 3 Hours Time:- 10 am -1 pm

Date:26/11/2014

Instructions:

MIS No.

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1. Figures to the right indicate the full marks.
2. Mobile phones and programmable calculators are strictly prohibited.
3. Writing anything on question paper is not allowed.
4. Exchange/Sharing of anything like stationery, calculator is not allowed.
5. Assume suitable data if necessary.
6. Write your MIS Number on Question Paper

- Q1) (a)What is bulking of sand ? Explain the field test to determine the extent of bulking of sand. [4]
- (b) Explain the necessity and the procedure for aggregate impact value test. [3]
- (c)Write in short on chemical composition of cement. [3]

- Q 2)(a) Explain water-cement ratio. Draw graphs giving relationship between w/c ratio and compressive strength of concrete [3]
- (b) Define shrinkage of concrete and give its classification. Write a short note on "Carbonation Shrinkage [4]
- (c) Explain the maturity rule for concrete in detail. [3]

Q 3) a)A set of 25 cubes was tested at 28 days and the following results are recorded.

28.3, 28.1, 32.1, 26.7, 29.2, 27.4, 26.1, 31.2, 26.8
30.0, 25.7, 28.6, 27.1, 28.7, 33.6, 24.0, 30.6,
30.1, 30.5, 23.8, 29.0, 28.4, 25.2, 29.7, 28.5

- Determine i) Mean strength (ii) Variance (iii) Standard deviation (iv) Coefficient of variation. (6)
- b) What are factors to be considered in mix design, explain in detail. (4)

Q 4)(a) Explain 'pulse velocity method' for determining concrete properties. [3]

(b) What is self-compacting concrete ? What are advantages and disadvantages of it ? [4]

(c) Write a note on corrosion of reinforcement and its remedial measures. [3]

Q 5) a) Write short notes on (6)

(i) Gas forming admixtures
(ii) Use of admixtures in concrete

(b) What is ready-mix concrete ? [4]

Q 6 (a) Write short notes on any two [6]

(i) Shotcrete
(ii) Sulphate attack on concrete
(iii) Evaluation of cracks.

(b) Explain various reasons of cracking of hardened concrete. [4]

OR

Q 6. (a) Match the following and rewrite [6]

(1) Ferrocement	(a) Ghat Ghar dam
(2) Roller compacted concrete	(b) Method for under-water concreting
(3) Pumping of concrete	(c) It is treatment given to slabs and thin wall to improve the quality of concrete
(4) Tremie method	(d) Useful for smaller jobs in city areas
(5) Vacuum concrete	(e) It is the method of transporting concrete
(6) Ready mix concrete	(f) Boat building material

(b) What is high performance concrete ? State the applications of it and requirement for successful production of it. [4]
