

S.E. - Sem - IV - civil

C.T

(old)

8/6/15

**(OLD COURSE)**

**Q.P. Code : 3972**

**(3 Hours)**

**[Total Marks : 100**

Instructions: 1. Question no. 1 is compulsory and solve any four questions out of remaining six questions.

2. Draw neat sketches wherever necessary.

3. Figures to the right indicates full marks.

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|-------|---|----|
| 1(a)  | Enlist any five properties for coarse and fine aggregates.  | 20 |
| (b)   | Define high performance and high strength concrete.   |    |
| (c)   | Write any five advantages of ready mixed concrete.  |    |
| (d)   | Explain Segregation and Bleeding of concrete.   |    |
| 2 (a) | Explain in detail manufacturing process of concrete.  | 10 |
| (b)   | Explain in detail various properties of fresh concrete.   | 10 |
| 3 (a) | Explain in detail various factors affecting workability of concrete.  | 10 |
| (b)   | Explain step by step procedure to design concrete mix for compressive strength as per IS: 10262-1984.   | 10 |
| 4 (a) | Enlist any five types of admixtures commonly used and explain them in detail.   | 10 |
| (b)   | What are the various Non destructive tests carried out on concrete? Explain ultrasonic pulse velocity test in detail.   | 10 |
| 5(a)  | Draw flow diagram for ready mixed concrete plant and explain each operation in detail.  | 10 |
| (b)   | Explain in detail Hot weather and cold weather concreting?  | 10 |
| 6     | Write short notes on the following  |    |
| (a)   | Explain various methods adopted for curing of Concrete members.   | 5  |
| (b)   | Light weight concrete   | 5  |
| (c)   | Fibre reinforced concrete   | 5  |
| (d)   | Polymer concrete  | 5  |
| 7 (a) | What are the factors affecting durability of concrete?  | 5  |
| (b)   | What is carbonation of concrete?  | 5  |
| (c)   | Explain in detail crack repair technique.   | 5  |
| (d)   | The concrete mix design is carried out as per Indian Standard Method for M30 concrete. The crushing strength test results of three cubes after 28 days of curing are: 22 N/mm <sup>2</sup> , 44 N/mm <sup>2</sup> & 31N/mm <sup>2</sup> . Can this result be accepted? If not, give the specific reason(s). | 5  |