

Total No. of printed pages = 3

CT-502/CT/5th Sem/2016/N

CONCRETE TECHNOLOGY

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Describe durability of concrete. 3
(b) Discuss sulfate attack and acid attack of concrete in detail. Also discuss the possible remedies against each of the attacks. 6+5=11
2. Discuss Rheology and Rheological properties of concrete in detail, including different components that affects it. 14
3. (a) What are mineral admixtures and why are they used in concrete ? 2+2=4

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- (b) What is fly ash ? Discuss how PFA improves the quality of concrete. $2+8=10$
4. (a) What are admixtures in concrete ? Differentiate between chemical and mineral admixtures. $2+4=6$
- (b) Explain : $2 \times 4 = 8$
- (i) Retarding admixtures
 - (ii) Accelerating admixtures
 - (iii) Air entraining agents
 - (iv) Plasticizers and superplasticizers.
5. (a) Define and explain : $5 \times 2 = 10$
- (i) Bleeding
 - (ii) Segregation
 - (iii) Workability of concrete
 - (iv) Bulking of sand
 - (v) Soundness of cement
- (b) What are the ideal requirements for the workability of fresh concrete ? Discuss in brief. 4

6. (a) Discuss about the manufacturing of Ordinary Portland Cement (OPC). 4
- (b) What are the main four compounds of OPC ? Discuss about each of them in detail.
4+6=10
7. (a) Differentiate between OPC and PPC. 4
- (b) What are aggregates in concrete ? Discuss about the characteristics of aggregates in detail.
3+7=10