

Total No. of printed pages = 3

CT-502/CT/5th Sem/2017/M

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) Discuss about the manufacturing of Ordinary Portland Cement (OPC). 4
- (b) What are the main four components of OPC ? Discuss about each of them in detail. 4+6=10
2. (a) Define and elaborate : 5×2=10
 - (i) Bleeding in concrete
 - (ii) Segregation in concrete
 - (iii) Workability of concrete
 - (iv) Bulking of sand
 - (v) Soundness of cement.

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- (b) What are the ideal requirements for the workability of fresh concrete ? Discuss them in brief. 4
3. (a) Differentiate between OPC and PPC. 4
- (b) What are aggregates in concrete ? Discuss about the characteristics of aggregate in detail. 3+7=10
4. (a) Discuss the following : 4×2=8
- (i) Retarding admixtures
 - (ii) Accelerating admixtures
 - (iii) Plasticizers and super-plasticizers
 - (iv) Air entraining agents.
- (b) Differentiate between chemical and mineral admixtures. 6
5. (a) Describe durability in concrete. 3
- (b) Discuss sulfate attack and acid attack of concrete-in detail. Also recommend possible remedies against each of the attacks. 6+5=11

6. (a) What is fly ash ? Discuss how PFA improves the quality of concrete. $2+8=10$
- (b) What are mineral admixtures and discuss their usability in concrete. $2+2=4$
7. Discuss Rheology and rheological properties of concrete in detail, including different components that effects it. 14