

B.Tech. Civil (Construction Management)

Term-End Examination

June, 2011

ET-581(A) : TESTING FOR QUALITY CONTROL

Time : 3 hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. (a) Fill in the blanks in the following : $6 \times 1\frac{1}{2} = 9$
- (i) For determination of fineness of cement by sieving the cement is sieved through _____ micron I.S. sieve.
 - (ii) The cement paste should be prepared and filled in vicat's mould with in _____ minutes.
 - (iii) The percentage by weight of particles whose greatest dimension (length) is greater than _____ times their mean dimension is called as Elongation Index of aggregate.
 - (iv) The base diameter of the mould used for slump test is _____ mm.
 - (v) The percentage of fines through 2.36 mm sieve in 10 percent fines value test should fall in the range of _____ percent.
 - (vi) The Aggregate Abrasion value should not be more than _____ percent for coarse aggregates.

- (b) Explain briefly about *any two* of the following : 2x2½=5
- (i) Soundness test for aggregates
 - (ii) Significance of specific surface of cement
 - (iii) Failure of concrete specimens.
2. (a) Describe the procedure to determine the initial setting time of cement and discuss the significance of this test. 7
- (b) Describe procedure to determine specific gravity of cement and discuss the utility of the test. 7
3. Differentiate *any Four* of the following : 4x3½=14
- (a) Boiling water and cold immersion test of plywood.
 - (b) Non - destructive and Destructive testing methods for concrete.
 - (c) Design mix and nominal mix of concrete.
 - (d) cylindrical strength and cube strength of concrete
 - (e) Aggregate crushing value and Aggregate Impact value.
4. Write short notes on *any Four* of the following :
- (a) Alkali Aggregate reaction 4x3½=14
 - (b) Significance of curing of concrete
 - (c) Water absorption test for coarse aggregates
 - (d) Bulking sand phenomena
 - (e) Acceptance criteria of concrete

5. Describe the following (*any Four*) : **4x3½=14**
- (a) Heat of Hydration
 - (b) Rebound Hammer test
 - (c) Test for water absorption of bricks
 - (d) Cylinder splitting tension test
 - (e) Aggregate Impact value test
6. (a) Discuss factors affecting compressive strength of concrete. **4+5+5**
- (b) Discuss slump Test to determine the workability of concrete.
 - (c) Describe procedure to determine tensile strength of concrete.
7. (a) Discuss test for performances of an admixture in concrete mix. **6+4+4**
- (b) Describe steps for Design Mix of concrete.
 - (c) Discuss the importance of compaction in concrete.
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