

B.Tech. Civil (Construction Management)

Term-End Examination

December, 2006

ET-581(A) : TESTING FOR QUALITY CONTROL

Time : 3 hours

Maximum Marks : 70

Note : *Attempt any **five** questions. All questions carry equal marks. Use of calculator is permitted.*

- 1.** Explain briefly any **seven** of the following : **7×2=14**
- (a) Heat of hydration
 - (b) Arithmetic mean
 - (c) Population standard deviation
 - (d) Turbidity
 - (e) Initial setting time of cement
 - (f) Bulking of sand
 - (g) Bulk density
 - (h) True slump
 - (i) Aggregate impact value
 - (j) Water cement ratio

2. (a) What tests would you advise to a petty contractor to test cement at his site ? Also describe method of testing cement in tension and compression. 7
- (b) What do you mean by workability of concrete ? How can it be determined using Vee Bee test and Ball penetration test ? Comment on their suitability in field situations. 7
3. (a) Distinguish between segregation and bleeding of concrete. Give detailed procedure for testing of concrete for bleeding. 7
- (b) Why is it important to determine chloride content in admixtures ? How can it be determined by volumetric and gravimetric methods ? 7
4. (a) How would you determine tensile strength of concrete by ring tension test ? Discuss the effect of rate of loading and height to diameter ratio on the strength of sample. 7
- (b) Describe the importance of statistical methods in quality control, and acceptance criteria for concrete. 7
5. (a) List different tests for testing of surface hardness of concrete. Describe Lok test and state merits and limitations of this test. 7
- (b) Describe various tests that are carried out on clay bricks. 7

6. (a) List various tests recommended for timber and describe procedure of testing by any two of the methods. 7
- (b) Why do we need to test AC-sheets ? How are these tested for their impermeability ? 7
7. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Water cement ratio
 - (b) Normal distribution curve
 - (c) Wearing resistance of tiles
 - (d) Vicat apparatus
 - (e) Soundness of aggregates
 - (f) Alkali aggregate reactivity