01045

Diploma in Civil Engineering

Term-End Examination

June, 2012

BCE-044 : CONCRETE TECHNOLOGY

Time : 2 hours   *Maximum Marks : 70*

Note : *Answer any five questions including question number 1 which is compulsory.*

1. (a) Answer *any two* of the following in brief (2-3 lines only) :   **2x2=4**
   (i) What is meant by an admixture ?
   (ii) Differentiate between mild steel and tor steel.
   (iii) Why the colour of ordinary portland cement is grey ?

   (b) Fill in the blanks choosing suitable word. **4x1½=6**
   (i) Concrete is suitable for compaction by vibrator if it is _____. (plastic/set)
   (ii) Bleeding is the property of concrete in _____ stage. (plastic/hardened)
   (iii) Soundness of cement is determined by _____ apparatus. (Vicat/Le chatelier).
   (iv) One bag of cement is _____ kgs. (35/50).

(c) Select the correct option (attempt *any four*) 4x1=4

(i) The temporary (increase /decrease) in volume of sand due to moisture is called bulking.

(ii) Compression Testing machine measures (Strength/workability) of concrete.

(iii) Road Note No.4 is the method of designing (the road/the concrete mix).

(iv) The first operation of finishing of concrete is (Screeding/floating)

(v) The gauge boxes are available in a size of (35 liters/50 litres)

2. (a) Differentiate between *any two* of the following : 2x4=8

(i) Accelerators and retarders

(ii) Weigh batching and volume batching

(iii) Internal and External vibrator

(b) Define the following (*any two*) : 2x3=6

(i) Aggregate impact value

(ii) Buttering the mixer

(iii) Standard consistency of cement

3. (a) Enlist types of cement. Explain characteristics of any one. 8

(b) Explain compression strength test for cement. 6

4. (a) Discuss various field tests to check quality **8** of cement.

   (b) Write the procedure of determining fineness **6** modulus of aggregate.

5. (a) Explain Vee-Bee consistometer test with a **8** neat sketch.

   (b) Describe the relation between strength and **6** water cement ratio with the help of a neat sketch

6. (a) Describe various considerations in the **8** storage of ingredients of concrete at site.

   (b) Compare hand mixing and machine **6** mixing of concrete.

7. Write short notes on *any four* of the following :

4x3½=14

   (a) Workability of concrete

   (b) Cement factor and yield of concrete

   (c) Stages of quality control

   (d) Prepacked concrete

   (e) Ferrocement

   (f) RMC