

**DIPLOMA IN CIVIL ENGINEERING
DCLE(G) / DCLEVI**

Term-End Examination

00941 December, 2015

BCE-044 : CONCRETE TECHNOLOGY

Time : 2 hours

Maximum Marks : 70

Note : *Question no. 1 is compulsory. Answer any four from the remaining.*

1. Choose the correct answer : 7×2=14

- (a) The resistance provided by concrete to the flow of water through it, is called
- (i) Creep
 - (ii) Workability
 - (iii) Slump
 - (iv) Impermeability
- (b) Soundness test of cement is done by
- (i) Vicat apparatus
 - (ii) Le-Chatelier apparatus
 - (iii) Slump cone
 - (iv) Vee-Bee test apparatus

- (c) Fineness Modulus gives an idea about the
- (i) shape of aggregate
 - (ii) size of aggregate
 - (iii) weight of aggregate
 - (iv) None of these
- (d) Aggregate Impact Value (AIV) test is the relative measurement of
- (i) toughness
 - (ii) hardness
 - (iii) workability
 - (iv) compressive strength
- (e) The process of mixing cement mortar in a machine mixer prior to mixing of first batch of concrete is called
- (i) charging
 - (ii) buttering
 - (iii) curing
 - (iv) None of these
- (f) Bulking of sand is 20%. Volume of non-bulked sand is 50 litres. The quantity of bulked sand will be
- (i) 50 litres
 - (ii) 40 litres
 - (iii) 70 litres
 - (iv) 60 litres

(g) The concrete should not be thrown from a height more than

(i) 4 m

(ii) 3 m

(iii) 2 m

(iv) 1 m

2. (a) What are the disadvantages of using concrete? 7
- (b) Enlist and explain the properties of concrete at plastic stage. 7
3. (a) Enlist the chemical compounds (Bouge's compounds) of cement. State their properties. 7
- (b) Enlist different types of cement. Explain any one. 7
4. (a) Explain the consistency test of cement. 7
- (b) Explain the bulking of sand. 7
5. (a) Explain Aggregate Impact Value (AIV) test. 7
- (b) Differentiate between weigh batching and volume batching of aggregate. 7

6. (a) Determine the quantities of coarse aggregate and fine aggregate for one bag of cement to prepare a mix of 1 : 2 : 4 proportion by volume (in dry state). Consider the bulking of fine aggregate as 15%. 7
- (b) Explain different methods of finishing of concrete. 7
7. Write short notes on any *four* of the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Advantages of Steel Formwork
 - (b) Gunite
 - (c) Cold Weather Concreting
 - (d) Quality Control of Concrete
 - (e) Yield of Concrete and Concrete Factor
 - (f) Proportioning of Concrete
-