

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

**Term-End Examination**

**00174 June, 2017**

**BCE-052 : TRANSPORTATION ENGINEERING**

*Time : 2 hours*

*Maximum Marks : 70*

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**Note :** *Question no. 1 is compulsory. Attempt any four questions from the remaining. Calculator is permitted.*

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1. Choose the correct answer : 7×2=14
- (a) Reaction time of a driver
- (i) increases with increase in speed
  - (ii) decreases with increase in speed
  - (iii) is the same for all speeds
  - (iv) None of the above
- (b) The value of ruling gradient in plains as per IRC recommendation is
- (i) 1 in 12
  - (ii) 1 in 15
  - (iii) 1 in 20
  - (iv) 1 in 30

- (c) The equivalent factor of passenger car unit (PCU) for a passenger car as per IRC is
- (i) 1.0
  - (ii) 2.0
  - (iii) 0.5
  - (iv) 10
- (d) The number of fish bolts per fish plate is
- (i) 2
  - (ii) 4
  - (iii) 5
  - (iv) 6
- (e) Gauge is the distance between
- (i) centre to centre of rails
  - (ii) running faces of rails
  - (iii) outer faces of rails
  - (iv) None of the above
- (f) When a ship floats at its designed water line, the vertical distance from the water line to the bottom of the ship is known as
- (i) beam
  - (ii) depth
  - (iii) free board
  - (iv) draft

- (g) The minimum width of clearway is
- (i) 50 m
  - (ii) 100 m
  - (iii) 150 m
  - (iv) 250 m
2. Enumerate the various modes of transport. Discuss the role of each mode of transport with its advantages and disadvantages. 14
3. (a) What are the tests conducted on bitumen ? Explain the penetration test with suitable neat sketches. 7
- (b) Enumerate the tests conducted on stone aggregates. Explain one of them in brief. 7
4. (a) What are the functions of a pavement ? Discuss the characteristics of a pavement. 7
- (b) Discuss the functions of various layers in a flexible pavement and a rigid pavement. 7
5. (a) Explain the types of joints needed in concrete pavements in detail. 7
- (b) What are the common defects noticed in a bituminous road ? 7

6. (a) Explain the points that must be considered in selecting the alignment of a railway line. 7
- (b) Draw the cross-section of a BG track. 7
7. (a) Define any *two* of the following terms for an airport :  $2 \times 3 \frac{1}{2} = 7$
- (i) Apron
- (ii) Taxiway
- (iii) Hanger
- (b) Explain the points to be considered for choice of site for an airport. 7
8. (a) Give the sketch of a floating dry dock with details. 7
- (b) What are the advantages of pipeline transport ? 7
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