DIPLOMA IN CIVIL ENGINEERING
DCLE(G)

Term-End Examination

ㅁㅁ5ㅁ7   December, 2017

BCE-052 : TRANSPORTATION ENGINEERING

Time : 2 hours   *Maximum Marks : 70*

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

1. Choose the correct answer :   *7×2=14*

    (a) Bitumen of grade 80/100 means

    (i) Its penetration value is 8 mm

    (ii) Its penetration value is 10 mm

    (iii) Its penetration value is 8 to 10 mm

    (iv) Its penetration value is 8 to 10 cm

    (b) The bottom-most layer of pavement is known as

    (i) Wearing course

    (ii) Base course

    (iii) Sub-base course

    (iv) Subgrade

(c) When two roads, with two-lane, two-way traffic, cross at an uncontrolled intersection, the total number of potential major conflict points would be

(i) 32

(ii) 24

(iii) 16

(iv) 4

(d) The rail is designated by its

(i) Length

(ii) Weight

(iii) Cross-section

(iv) Weight per unit length

(e) The gauge dimension for broad gauge is

(i) 0·676 m

(ii) 3·676 m

(iii) 1·676 m

(iv) 2·676 m

(f) A ship is berthed in a chamber and lifted by principles of buoyancy. Such a chamber is called

(i) Dry dock

(ii) Wet dock

(iii) Floating dock

(iv) Refuge dock

(g) According to ICAO, all markings on the runways are
   (i) Yellow
   (ii) White
   (iii) Black
   (iv) Red

2. (a) Give a brief account of the following with reference to Indian transport : $4 \times 2\frac{1}{2} = 10$
   (i) Air Transport
   (ii) Shipping
   (iii) Inland Water Transport System
   (iv) Pipelines

   (b) Write the broad features of Nagpur Plan. *4*

3. (a) Discuss the points that shall be kept in view in selecting the road in plain and hilly areas. *7*

   (b) Define the following terms used in the cross-section of a road : *7*
   (i) Shoulder
   (ii) Kerb
   (iii) Chamber
   (iv) Formation Width

4. (a) Write the advantages and disadvantages of flexible and rigid pavements. *7*

   (b) Give the quality control measures required for flexible and concrete roads. *7*

5. (a) Give a sketch of a subsurface drainage for lowering the water table. *6*

(b) What are the causes for deterioration of a road ? *4*

(c) Write the common defects in a bituminous road. *4*

6. (a) Write the desirable properties of rails. *4*

(b) Write the components of a turnout of railway track. Give a sketch of Left Hand Turnout. *10*

7. (a) Write the main parts of an aircraft and their functions. *7*

(b) Write the maintenance elements of an airport. Explain each of them in brief. *7*

8. Define any *four* of the following terms for water transport system : $4 \times 3\frac{1}{2} = 14$

(a) Port

(b) Harbour

(c) Jetty

(d) Wharf

(e) Transit Shed

(f) Warehouse