BCE-052

Diploma in Civil Engineering

Term-End Examination

June, 2012

00265

BCE-052 : TRANSPORTATION ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Question number 1 is compulsory. Attempt any four questions out of balance questions. Calculator is permitted.*

1. (a) Fill in the blanks with most suitable options given in the bracket : 7x1=7

    (i) The length of major district roads in India is approximately _____ km.

    (1,00,000/ 1,25,000/ 3,00,000)

    (ii) Unigauge programme of railways refers to conversion of _____ gauge section to broad gauge.

    (narrow / meter / yard)

    (iii) The long - term road plan prepared for 1961 - 1981 is known as _____ plan.

    (Nagpur / Bombay / Lucknow)

(iv) _____ is a vertical or sloping member along the edge of a pavement for supporting raised footpaths.

(Terrain / Median / Kerb)

(v) _____ is a type of rock formed by decomposition of basalt and other rocks.

(Laterite / Lime stone ./ Sand stone)

(vi) The number of sleeper per unit length of the rail is sleeper _____

(spacing / density / distance)

(vii) _____ is a shed for accommodating aircraft for repairs and maintenance.

(Locoshed /Engine shed / Hangar)

(b) Select the correct and incorrect statement from the followings :   7x1=7

(i) Cochin port is a good example of artificial harbour.

(ii) One of the advantages of water transport is that it is feasible only where there is perennial depth of water.

(iii) Approach lighting system is the only aid in controlling movement of aircraft in the runways.

(iv) For taxiways and aprons, rigid pavements are preferred.

(v) The formation width is 10.28 m for a double track BG, when the track is on embankment.

(vi) Gabion walls are made up of stones in wire mesh.

(vii) OPC Grade 33 is used for light duty concrete pavements.

2. (a) Explain the role of each mode of transport in India. What are the advantages and disadvantages of pipe Lines ? **5+2=7**

(b) Discuss the types of urban and non - urban roads. **7**

3. (a) What do you understand by sight distance ? Explain the types of sight distances. **2+5=7**

(b) Explain the factors on which the compaction of soil depends. How is density controlled in the field ? **4+3=7**

4. Explain the advantages and disadvantages of flexible and rigid pavements. **14**

5. (a) Discuss the methods of constructing roads in marshy areas and deserts. **7**

(b) For a river with alluvial bed and silt factor $f = 0.60$ and discharge 1500 cum per sec. Find out the water way required and depth of foundation. **3½+3½=7**

6. (a) Explain the need for maintenance of railway lines and the activities covered in the maintenance operation. $3\frac{1}{2}+3\frac{1}{2}=7$

   (b) Discuss the requirements of various authorities for passenger terminal building in an airport. 7

7. (a) Write short notes on harbour and harbour layout with suitable sketches. 4+3

   (b) Discuss inland water transport with its merits and demerits. 7

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