00841

BCE-052

DIPLOMA IN CIVIL ENGINEERING DCLE(G)
Term-End Examination
December, 2015

BCE-052 : TRANSPORTATION ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Question no.* **1** *is* **compulsory**. *Attempt any* **four** *questions from the remaining. All questions carry equal marks.*

1. Choose the appropriate answer from the options given for the following questions : *7×2=14*

    (a) Transition curve is provided for
       (i)   horizontal curve
       (ii) vertical curve
       (iii) Both of the above
       (iv) None of the above

    (b) Overtaking sight distance is calculated on the assumption that the overtaking vehicle
       (i)   travels behind the overtaken vehicle to perceive the clear road ahead
       (ii) accelerates to the design speed, overtakes the vehicle and returns to the original lane
       (iii) Both of the above
       (iv) None of the above

(c) Cut-back is

    (i) bitumen of high viscosity made by adding admixture

    (ii) bitumen of reduced viscosity by adding diluent

    (iii) tar of high viscosity

    (iv) tar of very low viscosity

(d) The load distribution factor for a single lane of 3·75 m width is

    (i) 1·5

    (ii) 2·0

    (iii) 2·5

    (iv) 3·75

(e) Transverse contraction joints are provided for relieving the tensile stress at a spacing of

    (i) 2 m to 3·5 m

    (ii) 3·5 m to 5 m

    (iii) 5 m to 7·5 m

    (iv) 7·5 m to 10 m

(f) Creep of rails

    (i) is forward movement of rails in the direction of dominant traffic

    (ii) is heavy stresses in rails due to heavy traffic

    (iii) is a phenomenon

    (iv) provides stability to the rails

(g) A solid structure which projects into the sea perpendicular to the shore to berth in vessels is called

  (i) Wharf

  (ii) Jetty

  (iii) Quay

  (iv) Breakwater

2. (a) What is sight distance ? How is it estimated ? 7

   (b) Discuss the broad features of Nagpur Plan. 7

3. (a) What are the tests conducted on stone aggregates ? Explain any two of them in detail. 7

   (b) What are the types of bituminous courses ? Explain any two in detail. 7

4. (a) What are the defects to be observed during the inspection of roads ? Explain pavement condition index. 7

   (b) Discuss the maintenance of concrete roads. 7

5. Describe the methods of construction of roads in marshy areas and deserts. *14*

6. (a) Write a note on fixation of waterway. 7

(b) Explain with sketches diamond crossing and scissors crossing. 7

7. Write short notes on any *two* of the following : *2×7=14*

(a) Metro Rail

(b) Airport Drainage

(c) Vertical Curves on Roads