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BCE-052

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

**Term-End Examination, 2019**

**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 ones. Use of scientific calculator is permitted.**

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1. Choose the correct answer in the following questions :

[7x2=14]

(a) The shape of the Camber, best suited for cement concrete pavements, is :

(i) Straight line

(ii) Parabolic

(iii) Elliptical

(iv) a combination of straight and parabolic

(b) The maximum width of a vehicle as recommended by IRC is :

- (i) 1.85 m
  - (ii) 2.44 m
  - (iii) 3.81 m
  - (iv) 4.72 m
- (c) Routes restricted for use by only motor vehicles :
- (i) National Highway
  - (ii) State Highway
  - (iii) Expressways
  - (iv) All of these
- (d) A load transfer device at transverse joints is :
- (i) Tie Rod
  - (ii) Dowel Bar
  - (iii) Slip Form Paver
  - (iv) None of these
- (e) Fish-plate in railways is :
- (i) Fastening to hold two rails together

- (ii) Part of the permanent way on which the wheels move
  - (iii) Part of the track on which rails rest
  - (iv) The separation distance between two rails of a track
- (f) A hanger in air transportation is :
- (i) a shed for accommodating aircraft for repairs and maintenance.
  - (ii) an area intended to accommodate standing aircraft for the purpose of loading or unloading of cargo.
  - (iii) an area next to the runway end intended for the aircraft to be parked in a state of readiness for taking off.
  - (iv) an area where passengers undergo security checks.
- (g) A place where ships can be moored and sheltered from wind and waves :
- (i) Port
  - (ii) Harbour

(iii) Dock

(iv) None of these

2. What are the various modes of Transport ? Write any two advantages and disadvantages of each mode of transport. [14]
3. (a) Why is a transition curve provided ? Show main elements of a circular curve provided with transitions in a neat sketch. [7]
- (b) Give sketches of summit and valley curves. [7]
4. (a) What are the types of Joints in concrete pavements ? Discuss any one with a neat sketch. [7]
- (b) What are the common defects noticed in a concrete pavement ? Describe briefly. [7]
5. (a) What is the formula for determining the cant of a railway track ? What is the maximum cant provided for a BG track ? [7]
- (b) Draw a neat sketch of a diamond and scissors crossing. [7]

6. (a) What are the main components of an Airport ?  
Discuss the utility of any two of them briefly. [7]
- (b) How is the maintenance of payments in an airport carried out ? Discuss important considerations briefly. [7]
7. (a) Briefly discuss the need of providing vertical curves in a highway. [7]
- (b) What are the two types of harbours ? Give sketches to illustrate. [7]
8. Write short notes on **any two** of the following : [2x7=14]
- (a) Nagpur plan
- (b) Bituminous emulsion
- (c) Pavement Condition Index
- (d) Landslides

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