ET-505

B.Tech. Civil (Construction Management)/ B.Tech. Civil (Water Resources Engineering)

Term-End Examination

001 19

December, 2014

ET-505 : TRANSPORTATION AND TRAFFIC ENGINEERING

Time : 3 hours   *Maximum Marks : 70*

Note : *Attempt **all** questions. All questions carry equal marks. Use of calculators is permitted.*

1. Answer any *two* of the following :   *2×5=10*
    (a) The present highway classification system is given by the Lucknow Plan (1981-2001). Explain in detail.

    (b) What is meant by the following :
        (i)   Piggy-back system
        (ii)   RORO
        (iii) Road-railer

    (c) A sum of ₹ 80 crores is allotted for a road improvement project. The expected annual savings in vehicle operating cost from this project is ₹ 14 crores. Is the project worthwhile at 12% interest rate ? Assume 20 years as analysis point. (Adopt Benefit/Cost Ratio method)

2. Answer any *two* of the following :   *2×5=10*

   (a) What is the importance of soil compaction in road construction field ?

   (b) Why is extra widening on curves necessary ?

   (c) Draw a typical cross-section of Urban Arterial street having all necessary provisions.

3. Answer any *two* of the following :   *2×5=10*

   (a) Explain lime fly ash stabilization of soils.

   (b) Explain the use of machineries for a road embankment construction.

   (c) Write briefly on surface design in connection with road construction.

4. Answer any *two* of the following :   *2×5=10*

   (a) Why is public transport desirable ? What are the types of public transport systems ?

   (b) Discuss the engineering measures to be adopted to prevent road accidents.

   (c) What are the factors that govern traffic growth ?

5. Answer any *two* of the following :   *2×5=10*

   (a) Explain the considerations for selection of site for a Railway Station. What are the facilities to be provided for a Railway Station ?

   (b) Describe briefly a Marshalling Yard.

(c) Draw a sketch of the cross-section of a B.G. Railway track in embankment showing the different elements with dimensions. Define Cant in a railway track.

6. Answer any **two** of the following : 2×5=10

(a) What are the functions of the following in an Airport :
(i) Taxiways
(ii) Hangar
(iii) Holding apron
(iv) Runway

(b) State different requirements for designing a passenger terminal building from the viewpoint of Airlines and Passengers.

(c) Write briefly on lock gate with a proper sketch and labelling.

7. Answer any **two** of the following : 2×5=10

(a) What are the specific locations where aerial ropeways are useful ? State the factors to be considered for designing the trestle.

(b) Explain the continuous flow system of transportation.

(c) Draw a proper sketch of Harbour Layout and briefly state the functions of each element of the harbour.

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