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ET-505

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

Term-End Examination

June, 2013

ET-505 : TRANSPORTATION AND TRAFFIC ENGINEERING

Time : 3 hours *Maximum Marks : 70*

*Note : Attempt **all** questions. **All** questions carry **equal** marks.*

1. Answer ***any two*** of the following : **2x5=10**

   (a) Discuss various modes of Transportation available in India.

   (b) List out various items which will determine the cost of producing transport services. How is their pricing done ?

   (c) Data for two projects are given as under :

	Initial cost of construction	Actual maintenance cost
Project A	Rs. 10 crores	Rs. 10 Lakhs
Project B	Rs. 12 crores	Rs. 2 Lakhs

   What is a better alternative over a period of 20 years ,the interest rate being 12% ?

2. Answer *any two* of the following : **2x5=10**

(a) What are the guide lines for the selection of highway alignment, in general ?

(b) What are the dimensions of Indian Vehicles ? What are the forces to be overcome by a moving vehicle?

(c) Derive an expression for finding the radius of a horizontal curve and super elevation rate for a highway, for the equilibrium of a vehicle.

3. Answer *any two* of the following : **2x5=10**

(a) Explain IRC guide lines for design of a flexible pavement.

(b) Why are joints necessary in concrete pavements ? How are the transverse expansion joints designed ?

(c) Define California Bearing Ratio(CBR). Explain the test to determine CBR.

4. Answer *any two* of the following : **2x5=10**

(a) What are the various parameteres that identify the power performance of vehicles ?

(b) How is the data collected in traffic survey analysed ? Mention the different methods used for the purpose. Discuss in detail about

(i) normal distribution and

(ii) linear regression techniques.

(c) Discuss important points about parking demand and parking geometry.Explain with neat sketches.

5. Answer *any two* of the following : 2x5=10

(a) Discuss the role and history of railways in India.

(b) What are the advantages of prestressed concrete sleepers ?

(c) What are turn outs ? Explain with a neat sketch.

6. Answer *any two* of the following : 2x5=10

(a) Explain various aspects of Air Traffic Control.

(b) What are runways ? Discuss the criteria for configuration, orientation and dimensions of runways. Explain with typical sketches.

(c) Explain the design of rigid airport pavements , by US corps of Engineers method.

7. Answer *any two* of the following : 2x5=10

(a) What are dry docks ? Explain them with neat sketches.

(b) Draw a layout of Heliport and label its different constituents . What are the services a helicopter can offer ?

(c) What are belt conveyors ? What are the components of a conveyor ?