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ET-505

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

Term-End Examination

December, 2010

ET-505 : TRANSPORTATION & 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) "Traffic is a function of Lane use" - Explain.

(b) What are the four basic components of a Transportation system? Describe them in brief.

(c) A highway improvement project costs Rs.50 crores. This will result annual saving of Rs. 10 crores in vehicle operating costs. Is the project worth while at 15 percent interest rate? Apply Benefit/cost Ratio method considering analysis period as 20 years.

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

(a) What is 'terrain'? Classify them for the purpose of design of Road.

(b) Write briefly on Indian road congress.

(c) The area of state of Maharastra was 3,08,000 sq.km, according to 1981 Census report. There were 567 towns with population above 5000. The total no. of towns and villages was 35,778. Determine the required length of various road categories.

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

(a) What is meant by "soundness" and "stripping value" for Aggregates? How these values are determined ?

(b) Define Pavement. What are the desirable qualities a Pavement should have?

(c) Coarse aggregates, fine aggregates and filler are combined in the proportion of 58:30:12 to produce dense bituminus concrete. The specific gravity of the materials is 2.52, 2.75 and 2.68 respectively. Determine the average specific gravity of the mixed aggregates.

2x5=10

4. Answer *any two* of the following :

(a) What are the three "E"s of road safety? Briefly discuss them.

(b) Narate parking Problem. Write down parking stall dimensions for Car both small and big, Two wheeler Bus and Cycle.

(c) Write briefly on Enoscope along with proper sketches.

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

(a) Write short notes on Indian Railway Administration and its Finances.

(b) Discuss advantage and disadvantages of cast Iron sleepers used in Railways.

(c) List out various ancillaries facilities and equipment which are required for efficient function of a railway stations and describe *any two* of them.

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

(a) Discuss about various configuration and orientation of Runways.

(b) State briefly the design requirements of the passengers terminal Building in a Airport.

(c) A berth, 250 m long, cater to ships carrying 20,000 tonnes of Cargo. Design a transit shed to accommodate the Cargo. The Cargo has a weight of 1.5 tonnes per cu.m. and fork lifts can stack Cargo upto a height of 3m.

(Assume, suitable width and height of transit shed)

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

(a) State advantages and disadvange of water Transport.

(b) Define Break water and state briefly on its various types. What are the forces acting on a break water?

(c) What are the features need to be considered while selecting a terminal station of a Rope ways system ? Write briefly on Design of Rope.
