

B.Tech. Civil (Construction Management) /
B.Tech. Civil (Water Resources Engineering)
Term-End Examination
June, 2008

**ET-505 : TRANSPORTATION & TRAFFIC
ENGINEERING**

Time: 3 hours

Maximum Marks: 70

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

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

- (a) "Transport is the cause or effect of development."
- Explain.
- (b) What are the ill-effects of improper parking of vehicles? Draw a typical layout for "off-street parking" with standard dimensions.
- (c) What are the advantages of Bus Transport System? Elaborate planning aspects for its successful operation.

2. Answer any two of the following :

2x5=10

- (a) Define WBM. What are its disadvantages ?
- (b) Course aggregates, fine aggregates and fillers are combined in the proportion of 60 : 30 : 10 to produce dense bituminous concrete. The specific gravity of the materials is 2.50, 2.70 and 2.68 respectively. Determine the average specific gravity of the mixed aggregates.
- (c) What is the need for street lighting ? Draw sketches showing the various basic arrangements of street lighting.

3. Answer any two of the following :

2x5=10

- (a) Discuss briefly the use of construction equipments in road earthwork. How is field density of soil measured ?
- (b) Briefly explain :
 - (i) Warping stresses
 - (ii) Zebra crossing
- (c) Discuss the application of "Coulomb's Law" in determining the shear strength of soil.

4. Answer any two of the following :

2x5=10

- (a) Give advantages and disadvantages that are involved with soil-cement stabilisation technique.

(b) Outline the principles of designing intersection when two or more roads meet at a point. Draw sketches for 3 typical "at-grade intersection".

(c) Write briefly on :

(i) Admixtures

(ii) Composite pavement

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

(a) List out advantages and disadvantages of prestressed concrete sleeper.

(b) Explain 'super-elevation' or 'cant' in a railway track.

Derive the relationship $e = \frac{V^2}{127} R$ (where the symbols have standard meanings).

(c) Write briefly on :

(i) Buffer stop with a sketch

(ii) Check rails and Guard rails

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

(a) What are the main components of a terminal building in an airport? Describe briefly any two of them.

(b) What are Overlays? Determine the thickness of concrete overlays as per US Corps of Engineers method over an existing concrete pavement 20 cm thick which is badly cracked. (Assume required coefficient as 0.35). It has been found that a new slab of 25 cm is needed.

(c) Define the following :

- (i) IPT
- (ii) RORO
- (iii) MOLE
- (iv) RDSQ
- (v) NHAI

7. Answer any two of the following :

2x5=10

- (a) Name one of the transport modes which is most economical, fuel efficient and eco-friendly. State its different popular forms and their scope in future in India.
- (b) Write briefly on warehouse. What is "bonded warehouse" ?
- (c) A berth, 220 m long caters to ships carrying 35,000 tonnes of cargo. Design a transit shed to accommodate the cargo. The cargo has weight of 1.75 tonnes/cu.m. (Assume suitably any other data as may be required)