

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

Term-End Examination

June, 2011

**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) Discuss the various considerations that govern the selection of a highway route in hilly area ?
- (b) Derive the formulae for determining the safe distance, if the vehicle is travelling on a gradient.
- (c) Sketch a typical cross - section of a two - way urban highway with proper dimensions and Label it.

2. Answer *any two* of the following : **2x5=10**
- (a) What is meant by 'soil' classification? What is the use of soil classification?
 - (b) Explain with sketches why is extra widening on curves necessary?
 - (c) What is the current classification of roads in India? Illustrate each of them briefly.
3. Answer *any two* of the following : **2x5=10**
- (a) State briefly Plate Bearing test with suitable sketch.
 - (b) Discuss briefly about Public Transport system.
 - (c) What is the basic difference between Rigid and Flexible pavements? What are desirable properties of pavements?
4. Answer *any two* of the following : **2x5=10**
- (a) Calculate the safe overtaking distance for a two lane Major District road in plain terrain. Assume,
 - (i) Design speed : 85km/hr
 - (ii) Hesitation time : 3.5 seconds.
 - (iii) Overtaking time : 10 seconds
 - (iv) Safe distance : 55 m.
 - (b) State briefly the functions of road markings. What are common types of road markings?
 - (c) Write briefly on 'Atterberg's limits'.

5. Answer *any two* of the following : 2x5=10
- (a) What are the requirements of good rail ? Describe with neat sketches about three shapes of rail sections.
 - (b) What is permanent way ? Write briefly on Rail joints.
 - (c) Define cant in a railway track. Draw a sketch of the cross - section of B.G. Railway track in Embankment showing the different elements with dimensions.
6. Answer *any two* of the following : 2x5=10
- (a) Discuss the various factors that decide the selection of site for an Airport.
 - (b) Draw a layout of Heliport and label its different constituents. What are the services a helicopter can offer ?
 - (c) What are various forms of water transport ? Describe briefly the advantages of water transport.
7. Answer *any two* of the following : 2x5=10
- (a) State briefly the relationship that exists between 'transportation modes' and 'environmental pollution.'
 - (b) Draw a sketch of Harbour layout and briefly state the function of each element of the harbour.
 - (c) State briefly about Ropeway Transport System.
-