

B. Tech Degree V Semester Examination, November 2005**CE 504 (B) TRANSPORTATION ENGINEERING**
(2002 Admissions onwards)

Time : 3 Hours

Maximum Marks:100

- I. (a) What is meant by highway alignment? Discuss the important factors which affect the highway alignment. (10)
 (b) Define the term overtaking sight distance and show how its theoretical derivation can be made by making certain assumptions. (10)
- OR**
- II. (a) Define the term Super-elevation. What are its advantages? Also discuss the methods of providing Super-elevation. (10)
 (b) The radius of a horizontal highway curve is 450 m, super-elevation provided is 1 in 15 and the width of pavement curve is 7.5 m. If the rate of change of centrifugal acceleration is not to exceed 0.45 m/sec^3 and the rate of introductions of super-elevation (about the inner edge of pavement) is not to exceed 1 in 150, design the length of horizontal transition curve for a design speed of 100 Kmph. (10)
- III. (a) Explain the desirable properties of road aggregates. (10)
 (b) Explain in detail about the joints in concrete pavements. (10)
- OR**
- IV. (a) What is the basic difference between flexible and rigid pavements? Which are the factors to be considered in the design? (10)
 (b) Describe in detail the typical flexible pavement failures. (10)
- V. (a) Which are the different aircraft characteristics which affect the planning and design of airports? (10)
 (b) Calculate the actual length of the runway from the following data :
 Airport elevation : RL 100
 Airport reference temperature : 28°C
 Basic length of runway : 600 m
 Highest point along the length : RL 98.2
 Lowest point along the length : RL 95.2 (10)
- OR**
- VI. (a) Describe in detail various systems of aircraft parking with sketches. (10)
 (b) What is meant by the basic runway length? Discuss the three cases to be considered. (10)
- VII. (a) Explain the control of train movement by Centralized Traffic Control System. (10)
 (b) A 5° curve diverges from a 3° main curve in reverse direction in the layout of a B.G yard. If the speed on the branch line is restricted to 35 Kmph, determine the restricted speed on the main line. (10)
- OR**
- VIII. (a) Explain *any one* method of tunneling through hard rock. (10)
 (b) Explain in detail tunnel ventilation and drainage. (10)
- IX. (a) Explain in detail the classification of harbours. (10)
 (b) Classify different types of breakwaters. Briefly describe various methods of mound construction. (10)
- OR**
- X. (a) Briefly describe the design considerations of floating docks. Classify various types of floating docks and mention their advantages and disadvantages. (10)
 (b) What is dredging? Classify different types of dredging works. (10)
