

R07

Code: R7320106

B. Tech III Year II Semester (R07) Supplementary Examinations, November/December 2012

TRANSPORTATION ENGINEERING

(Civil Engineering)

Time: 3 hours

Max. Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 Explain why the saturation system is considered a rational method to decide the final road network and for phasing the road development program. Illustrate the saturation system with an example.
- 2 (a) Discuss the importance of stopping sight distance at intersections and the factors that influence the visibility at intersections. Explain the design principle of an intersection to ensure the minimum sight distance required.
(b) Calculate the minimum sight distance required to avoid a head-on collision of two cars approaching from the opposite direction at 100 kmph and 80 kmph on a road section. Assume a reaction time of 2.5 seconds, coefficient of friction of 0.7 and brake efficiency of 50 percent in either case.
- 3 (a) What are the objectives and scope of traffic engineering? Discuss.
(b) What are the road user characteristics that influence the traffic on roads? Explain.
- 4 Explain the classification of traffic signs. Give the specifications of each type with suitable sketches and give at least two examples for each type.
- 5 What the various types of traffic islands used? Explain the uses of each.
- 6 Draw a typical cross section of a permanent way. Discuss in brief the basic functions of various components of a railway track.
- 7 What is meant by a crossing? What are the essential requirements of a good crossing? Discuss various types of crossings in use on India railways.
- 8 (a) Explain in detail the influence of air craft design on runway length.
(b) The runway gradation map indicates that there is a rising gradient of 2.0 percent meeting a falling gradient of 0.70 percent. There is again an upgrade of 0.5 percent. Design the runway profile as per FAA specifications.