

Code No: **R31016**

R10

Set No. 1

III B.Tech I Semester Supplementary Examinations, October/November - 2016

TRANSPORTATION ENGINEERING-I

(Civil Engineering)

Time: 3 hours

Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
(IRC charts may be permitted)

- 1 a) What are the various methods of classifying the roads? Briefly outline the classification based on location and function as suggested in the Nagpur road plan. [8M]
b) What are the various plans to be prepared after the planning surveys are carried out? [7M]
- 2 a) Discuss the effects of shape of Camber and the effects of providing steep cross fall. [8M]
b) Draw the typical cross sections of M.D.R. in embankment, O.D.R. cutting, a city road and a national highway in cutting, clearly indicating the width of pavement, road and land. [7M]
- 3 a) Explain the terms spot speed, running speed, space-mean speed and time-mean speed. [8M]
b) A driver of a vehicle travelling at 65 kmph up a grade required 8 mts less to stop after he applies the brakes than the driver travelling at the same initial speed down the same grade. If the coefficient of friction between tyre and pavement is 0.42, what is the percent grade and what is the braking distance down the grade? [7M]
- 4 a) Explain the IRC method of designing traffic signals. [8M]
b) Write a note about grade separated structures. Draw neat sketches where ever necessary. [7M]
- 5 a) What are the desirable properties of bituminous mixes? What are the steps in bituminous mix design? Discuss briefly. [8M]
b) Explain the term CBR and the test procedure of laboratory and field tests. [7M]
- 6 a) Explain ESWL and the concept in the determination of the equivalent wheel load. [8M]
b) Write a note about the objectives and requirements of pavements. [7M]
- 7 a) Draw a sketch of rigid pavement cross section and show the component parts. Enumerate the functions and importance of each component of pavement. [8M]
b) Find the spacing between contraction joints for a 3.6 m slab width having a thickness of 22 cm for (i) plain concrete slab and (ii) R.C.C. slab. The allowable tensile stress values in concrete and steel are 0.91 and 1380 kg/m², coefficient of friction is 1.8. [7M]
- 8 a) Write short notes about interface treatment, penetration macadam, sheet asphalt and gravel roads [8M]
b) Explain the objects of compaction and the effects of inadequate compaction. Also, discuss the advantages and applications of various compacting equipment for construction of subgrade and embankments. [7M]

WWW.MANARESULTS.CO.IN

|||||||