



USN

Grid for USN number

06CV63

Sixth Semester B.E. Degree Examination, May/June 2010
Transportation Engineering - II

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer any FIVE full questions, selecting at least TWO questions from each part. 2. Missing data may be suitably assumed, wherever necessary.

PART - A

- 1 a. Explain the role of rail transportation in the development of a country. (08 Marks)
b. Draw a neat sketch of double line BG track cross - section in curves. Mention various component parts. (07 Marks)
c. Mention the requirements of an ideal permanent way. (05 Marks)
2 a. With neat sketches differentiate between double headed rails and flat footed rails. (10 Marks)
b. What are the different types of welding of rails? Explain any two of them. (10 Marks)
3 a. Mention the requirements of ideal sleeper. (04 Marks)
b. Draw a neat sketch of C.S.T. 9 sleeper. Mention the salient features. (06 Marks)
c. Calculate the maximum permissible train load that can be pulled by a locomotive having four pairs of driving wheels carrying an axle load of 24 tonnes each. The train has to run at a speed of 80 kmph on a straight levelled B.G. track. Also calculate reduction in speed if the train has to climb a gradient of 1 in 200.
If the train climbs a gradient with 2° curve, what would be the reduction in speed? (10 Marks)
4 a. Write short notes on : i) Grade compensation on curves ; ii) Negative cant. (10 Marks)
b. In a layout of a B.G. yard, a 8° curve diverges from a 5° main curve. If the maximum permissible speed on the main curve is 65 kmph, determine the restricted speed on diverging curve (10 Marks)

PART - B

- 5 a. Explain briefly the various factors considered in the selection of site for airport. (10 Marks)
b. The basic length of runway under standard condition is 1650.00 m. If the airport is required to be constructed at an altitude of 200 m above M.S.L, airport reference temperature being 25°C, what will be the total corrected length of runway? Assume effective gradient as 0.20%. (10 Marks)
6 a. Explain the various geometrics of taxiway. (10 Marks)
b. Write short notes on : i) Holding apron ; ii) Airport marking. (10 Marks)
7 a. Define 'wind rose diagram". With a neat sketch explain the method of locating the best orientation of runway. (10 Marks)
b. Mention the various assumptions made in basic length of runway. (05 Marks)
c. Determine the required effective gradient with the following details : (05 Marks)

Table with 2 columns: Chainage (m) and Percent gradient (%). Rows include chainage ranges from 0-300 to 1800-2100 and corresponding gradient percentages.

- 8 a. With the help of a neat sketch explain fore poling method of tunnelling in soft soils. (10 Marks)
b. Define "mucking". Mention different methods of mucking process. Explain any one method. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.