

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2456

Roll No.

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**B. Tech.**

(SEM. VI) THEORY EXAMINATION 2010-11

**TRANSPORTATION ENGG.-II**

*Time : 2 Hours*

*Total Marks : 50*

**Note :** (1) Attempt **all** questions.

(2) Marks are indicated against each question.

(3) Assume any data suitably, if required.

1. Attempt any **four** parts of the following : **(3×4=12)**
- What is a permanent way ? What do you understand by coning of wheels ? With neat sketch discuss the advantages of coning of wheels.
  - Give the list of various types of track fittings and fastening. What is fish plate ? Write the requirement of fish plate.
  - How the sleepers are classified ? Give the advantages and disadvantages of wooden sleepers.
  - Illustrate the various types of rail failures with sketches.
  - Mention the functions of ballast and state the requirements of a good ballast material.
  - What do you understand by the Gauge of a railway track ? Write a note on the "Uniformity of Gauge" in a country.

2. Attempt any two parts of the following : (6×2=12)
- (a) If a 5° curve track diverges from a main curve of 3° in an opposite direction in the layout of a BG yard. If the speed on the branch line is restricted to 35 kmph determine the restricted speed on the main line.
  - (b) How the maximum permissible speed of the train is determined on a curved railway track in India ?
  - (c) On a straight BG track a turnout takes off at an angle of 6° 42' 35", design the turnout when it is given, angle of switch 1° 34' 27", length of switch rail = 4.73 m, heel divergence = 11.43 cm and straight arm = 0.85 m.
3. Attempt any two parts of the following : (6×2=12)
- (a) What are the different types of station yards ? Explain the working of any one with the help of neat sketches.
  - (b) How the signals are classified ? Explain clearly the locations and the application of the following railway signals :  
Outer signal, Home signal, Starter Signal, Advance Starter Signal, Point Indicators.
  - (c) How the railway stations are classified ? What are the important factors to be considered while selecting a suitable site for a railway station ?
4. Attempt any two parts of the following: (7×2=14)
- (a) What is wind rose diagram ? Explain the procedure of determining the runway orientation.

- (b) What are the various characteristics of aircraft to be studied for airport design ? Write a brief note.
- (c) What is a Harbour ? Briefly explain the various types of Harbours.