Uttarakhand Technical University, Dehradun
TCE702- TRANSPORTATION ENGINEERING-2

M.M. 100

Note: Attempt all questions. Each question is of 20 marks.

Q.1 Attempt any 4 parts, each part is of 5 marks
   a) What is sleeper density? Using a sleeper density of n+5, find out the number of
      sleepers required for constructing a railway track (BG) 1000m long.
   b) How the sleepers are classified? Give the advantages and disadvantages of wooden
      sleepers.
   c) Mention the relative merits and demerits of Flat Footed rails and Bull headed rails
   d) Write short notes on (mention Indian Railway Board Guidelines)
      i. Gradients in station yards
      ii. Equilibrium cant
   e) Write specification/Tests required for ballast used in railway track.

Q.2 Attempt any 4 parts, each part is of 5 marks
   a) In how many zones Indian Railways is divided for administrative control?
   b) What do you understand by the Gauge of a railway track?
   c) Describe these terms:
      (i) Adzing of sleeper
      (ii) Fish plate
   d) What basic factor do you consider in designing turnout?
   e) Write a short Note on air transport development in India.

Q.3 Attempt any 2 parts, each part is of 10 marks
   a) Explain Stub switch and split switch with neat sketch.
   b) What are the different types of station yards? Explain the working of any one with the
      help of neat sketches.
   c) What are the objections for providing curvature on a railway track?

Q.4 Attempt any 2 parts, each part is of 10 marks
   a) Explain are the locations and the application of following railway signals: Outer
      signal, Starter Signal, Advanced Starter signal and Home signal
   b) How do you define the super elevation? What are the objects of providing super
      elevation on curves of a railway track?
   c) What are the different systems of controlling the movement of train in India? Give the
      advantages of CTC system.

Q.5 Attempt any 2 parts, each part is of 10 marks
   1. i) Write a detailed short note on Airport Marking.
      ii) Explain the design of a Taxiway of an airport.
   2. Write a detailed note on various types of markings on airport. Draw them with neat
      sketch.
3. Draw then various visual aids used for airport traffic control