B.Tech.(CE) (2012 to 2017) (Sem.–7,8)
# TRANSPORTATION ENGINEERING - II
Subject Code : BTCE-804
M.Code : 71862

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. **Answer briefly :**

   a) In which year was Metre gauge introduced in Indian Railways.

   b) What are the different gauges on Indian Railways?

   c) What do you mean by Scabbing of rails?

   d) How is seasoning of sleepers done?

   e) Give requirements of good ballast.

   f) When is ballast treated as undersized?

   g) What are the functions of formation?

   h) Give classification of obstruction to safe air navigations.

   i) What is Wind Rose diagram?

   j) Draw sketches of runway and taxiway fillets for small airports.

SECTION-B

2. Discuss the organizational structure of Indian Railways. How are the duties distributed in a typical zonal railway headquarters?

3. Compare the characteristics of different types of sleepers used in India.

4. A railway line and a highway pass through the clear zone area of an airport. Explain with sketches the clearance required over the highway and the railway line for safe landing and take-off of an aircraft.

5. The length of a runway under standard conditions is 1620m. The airport site has an elevation of 270m. Its reference temperature is 32.94°C. If the runway is to be constructed with an effective gradient of 0.20 %, determine the corrected runway length.

6. Explain with neat sketches, various markings on taxiway.

SECTION-C

7. a) What are the various methods of manufacture of concrete sleepers? Explain each in detail.

   b) What factors are to be kept in mind for maintenance of concrete sleepers?

8. Calculate the maximum permissible speed on a 1 degree curve on a Rajdhani route with a maximum sanctioned speed of 130 km/hr. The superelevation provided is 50 mm and the transition length is 60m. The transition length of the curve cannot be increased due to the proximity of the yard.

9. What are imaginary surfaces? What is their significance? Explain with the aid of neat sketches the shape of each surface for different types of airport.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.