

B.Tech IV Year I Semester (R13) Supplementary Examinations June 2017

TRANSPORTATION ENGINEERING – II

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What are the functions of rails?
 - (b) Bring out the differences between suspended and supported rail joints.
 - (c) If the ruling gradient is 1 in 140 on a particular section of MG and at the same time a 3.8 degree curve is situated on this ruling gradient, find out the allowable ruling gradient.
 - (d) What are the operational classifications of stations?
 - (e) How do you control noise nuisance in terminal building?
 - (f) What are the factors to be considered for finalizing the runway orientation?
 - (g) Compute the airport reference temperature if the average maximum temperature is 45°C and average day temperature is 33°C for the hottest month.
 - (h) What is the use of beacon lighting?
 - (i) Discuss briefly about the influence of size of aircraft on the airport planning.
 - (j) What is the classification of harbors based on location?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 (a) Discuss briefly about the functions of different components of permanent way.
(b) What are the advantages and disadvantages of concrete sleepers?

OR

- 3 (a) Explain the concept of creep using percussion theory.
(b) What are the requirements of sleepers?

UNIT – II

- 4 (a) What is cant deficiency? Discuss briefly about the limits of cant deficiency.
(b) Discuss about the requirement of passenger platforms.

OR

- 5 (a) Explain briefly about types of Marshalling yards.
(b) Calculate the maximum permissible speed on a curve of high speed for the following data on a B.G track. Degree of curve 1.2°, amount of super elevation 8.0 cm, length of transition curve 125 m, maximum speed of the section likely sanction speed = 150 kmph.

UNIT – III

- 6 (a) Compute the corrected runway length for the basic runway length of 1600 m. if it is to be provided at an altitude of 450 m above MSL, the airport reference temperature is 32°C and the effective gradient is 1.4%. Apply the necessary checks.
(b) What are the various facilities to be provided in a terminal building?

OR

- 7 (a) Draw a typical sketch of an airport layout showing the location of airways, taxiways, apron, runway, terminal building etc., of a two way offset parallel runways.
(b) Explain the factors to be considered for the number of gateways required and their positions.

UNIT – IV

- 8 (a) Explain briefly about Bypass taxiway with the help of a neat sketch.
(b) Differentiate between minimum circle radius and minimum turning radius of an aircraft.

OR

- 9 (a) What is the influence of aircraft capacity and aircraft speed on airport planner.
(b) Discuss briefly about runway threshold lighting and apron hangar lighting.

UNIT – V

- 10 (a) Discuss briefly about Rubble Mound Break waters.
(b) What are dry docks? Discuss briefly about the design principle of dry dock.

OR

- 11 (a) The biggest vessel to be slipped is a tug of 30 m length and 3.2 m draught. If the height of cradle block from the slipway deck is to be 0.8 m and the inclination of slipway to the horizontal is 3° , find out the total length of slipway by taking $k = 3.5$ m.
(b) Differentiate between Bucket Ladder dredger and Grab dredger.
