

B.Tech IV Year I Semester (R13) Regular Examinations November/December 2016

TRANSPORTATION ENGINEERING – II

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- What are the different types of rails used?
 - Explain the concept of Adzing of sleepers.
 - What is the difference between pusher gradient and momentum gradient?
 - Determine the weighted average of speed when 10 trains moves with 80 kmph, 5 trains with 85 kmph, 15 trains with 90 kmph and 20 trains with 75 kmph.
 - Discuss about noise effects on airports.
 - What are the data required for fixing the runway orientation using wind rose diagrams?
 - Explain the use of beacon lighting.
 - Explain the term turning radius of an aircraft.
 - Discuss about the influence of speed of aircraft on Exit Taxiways.
 - What is the classification of harbours based on utility?

PART – B

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

UNIT – I

- 2 (a) What are the requirements of a ideal permanent way?
(b) What is coning of wheels?

OR

- 3 (a) Define creep in the rails. Explain various causes of creep.
(b) What are the minimum number of sleepers required for a broad gauge having 20 km length?

UNIT – II

- 4 (a) Compute the maximum permissible speed for the following data on a curve of high speed B.G for the following data. Degree of curve = 1.2, Amount of super elevation = 8 cm, Length of transition curve = 150 m, Maximum sanctioned speed likely to be 135 kmph.
(b) What are the advantages of automatic signaling in railways?

OR

- 5 (a) Draw a neat sketch of Left hand turnout and show various parts of turnout.
(b) Write any four factors that can influence the site selection for a railway station.

UNIT – III

- 6 (a) What are the assumptions made while selecting the runway length?
(b) What are the factors to be considered for the airport vehicular circulation and parking system near terminal building?

OR

- 7 (a) Find out corrected runway length for a basic runway length of 2000 m which is proposed at an altitude of 450 m above M.S.L. The airport reference temperature 40°C and the effective gradient is 0.8%.
(b) What are the factors to be considered for the site selection of a terminal building?

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UNIT - IV

- 8 (a) A taxiway is to be designed for operating an aircraft having the following characteristics. Find out the turning radius of the taxiway. Wheel base of 17 m, Tread of main loading gear 6.63 m, turning speed of 45 kmph and the coefficient of friction between pavement surface and tyre is 0.14, width of taxiway is 22.5 m.
- (b) What are the design standards to be considered in the taxiway lighting?

OR

- 9 (a) What is the difference between rolling, pitching and yawning of an aircraft?
- (b) What are the various elements of airport lighting?

UNIT - V

- 10 (a) What are various types of break waters? Discuss the circumstances in which vertical wall breakwaters are considered.
- (b) Differentiate between: (i) Light house and Light ship. (ii) Beacon and buoy.

OR

- 11 (a) Discuss the role of jetties in harbours. What are the circumstances in which jetties are preferred over the solid wharves?
- (b) What is the principal advantage of a suction dredger? What are the circumstances in which a suction dredger is preferred?

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