Code: 13A01703 **R13**

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)

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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 o 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.

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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.

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