

B.Tech IV Year I Semester (R15) Regular & Supplementary Examinations November/December 2019  
**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)
- What is a permanent way?
  - What is coning of wheels?
  - What is cant deficiency?
  - What is a semaphore signal?
  - What functions are carried out in terminal?
  - Give the diagram of linear parking of aircrafts.
  - What are the three movements of an aircraft possible?
  - Define zero fuel weight of an aircraft.
  - Differentiate between Port and Harbour.
  - How Buoys are used as navigational aids?

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

**UNIT – I**

- 2 What are the functions to be served by Rails in a Permanent way? What are the requirements of ideal rails to perform this functions satisfactorily.

OR

- 3 Define "Gauge" of a railway track. How many types of Gauges are used in India and what are their standards? What are the problems in having a Multi-gauge system?

**UNIT – II**

- 4 What are the different types of station yards? Explain with neat sketches by describing the functions that take place in them.

OR

- 5 There is an unsymmetrical split of  $4^\circ$  and  $7^\circ$  curves from main line and branch line respectively in a B.G.Yard layout. If the speed restriction on main line is 58 kmph, what would be the speed restriction on branch line? Permissible cant deficiency is 7.62 cm.

**UNIT – III**

- 6 What is a Windrose diagram? Explain how a Normal Windrose diagram is used to fix runway alignment.

OR

- 7 An airport is proposed at a location which is 486 m above MSL. The basic runway length is computed as 2360 m. The local meteorological observatory has recorded the following information:  
 (i) Monthly average of the maximum daily temperature of the hottest month of the year =  $44.3^\circ\text{C}$ .  
 (ii) Monthly average of the daily temperature of the hottest month of the year =  $30.2^\circ\text{C}$ .  
 It is proposed to limit the effective gradient of the runway to 0.75%. Compute the actual length of the runway after corrections.

**UNIT – IV**

- 8 Explain about various geometric design elements of a Runway and the standards associated with them.

OR

- 9 What are the different types of load associated with an aircraft? Explain.

**UNIT – V**

- 10 What are breakwaters structures? Explain the types of breakwaters with supporting diagrams.

OR

- 11 (a) What are Wharves and Jetties? Why they are needed?  
 (b) Differentiate between Dry Docks and Wet Docks.

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