

Code: CE6T5

III B.Tech-II Semester–Regular/Supplementary Examinations–March 2019

**TRANSPORTATION ENGINEERING - II
(CIVIL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1. a) What is split head? What are its characteristics?
- b) List the factors affecting the choice of railway gauge.
- c) Draw a neat sketch of different rail sections.
- d) What are the advantages of sleepers?
- e) What is cant deficiency?
- f) Draw a neat sketch of turnout indicating its constituents.
- g) What is absolute block system in railway signalling?
- h) What is meant by a Approach Zone?
- i) Define apron.
- j) Distinguish between quays and jetties.
- k) Differentiate between a dry dock and wet dock.

PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) What is meant by wear of rails? How do you classify the wear? Discuss the various cause of wear. 8 M
- b) Define permanent way. What are the ideal requirements of permanent way? 8 M
3. a) List the different fixtures used in railway track and give the dimensional sketch of fish plate. 8 M
- b) Calculate the maximum permissible train load that a B. G locomotive can haul with 3 pairs of driving wheels with axle load of 22 kN each on a straight level track at a speed of 80kmph. Calculate the reduction in speed, if the train has to run on a rising gradient of 1 in 200. What would be the further reduction in speed if the train has to negotiate a 4° curve on the rising gradient? Assume coefficient of friction as 0.2. 8 M
4. a) Explain the standard and functions of interlocking in railways. 8 M
- b) Calculate the elements of a BG turnout, if feel divergence is 11.43cm. Number of crossing is 16 and angle of switch in $1^\circ 8' 0''$. Straight arm distance = 0.9m. 8 M

5. a) What is wind rose diagram? Explain any one method of constructing wind rose diagram. 8 M
- b) Determine the corrected length of runway for an airport site using the following data: 8 M
- i) Basic runway length = 2600 m.
 - ii) Airport elevation = 500m.
 - iii) Airport reference temperature = 21°C
 - iv) Runway effective gradient = 0.2%.
6. a) Discuss various advantages and limitations of water transport with reference to other modes of transport. 8 M
- b) Write in detail about working principle of a light house with a neat sketch. 8 M