

Code: CE6T5

**III B.Tech - II Semester – Regular/Supplementary Examinations
AUGUST 2021**

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

Duration: 3 hours

Max. Marks: 70

PART – A

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

11 x 2 = 22 M

1.

- a) Define wheel gauge. What are the various gauges used in India?
- b) List the types of rail joints.
- c) What is the minimum number of sleepers required for a 2km length of rail for a broad gauge?
- d) What is the difference between pusher gradient and momentum gradient?
- e) Differentiate between Repeating and Co-acting signals.
- f) What are the permissible speeds adopted for on different crossings?
- g) What are the various characteristics of a good aircraft?
- h) What is runway Orientation?
- i) Enumerate the requirements of good port.
- j) Differentiate between Natural and Artificial harbours.
- k) What do you understand by the term Runways design?

PART – B

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

3 x 16 = 48 M

2. a) With the help of a neat sketch, show the various components of a typical Railway track. 8 M

b) What is meant by wear of Rails? Enumerate the various types of Rail wear and enlist the methods by which it can be measured. 8 M

3. a) What is Ballast? What are the different types and enumerate the requirements of Good ballast. 8 M

b) Calculate the super elevation, maximum permissible speed and transition length for a 4° curve on main line with BG section with a maximum allowable speed of 100 kmph. Assume the equilibrium speed to be 70 kmph on branch line for 3° curve. 8 M

4. a) Explain the working principle of centralized traffic control system and automatic train control system. 8 M

b) Explain the necessity of points and crossings. 8 M

5. a) What data is to be collected for the design of sub surface drainage system for an airport? 8 M

b) Write short notes on corrections for elevation and temperature for a runway. 8 M

6. a) What are the factors to be considered for the selection of harbors on a sandy coast and lower reach of a river? 8 M

b) Differentiate between a Jetty and a Wharf. State the conditions under which you will prefer their construction. 8 M