

FACULTY OF ENGINEERING
BE VI-Semester (CE) (CBCS) (Backlog) Examination, August 2021

Subject: Transportation Engineering-II

Time: 2 Hours

Max .Marks: 70

Note: Missing data, if any, may be suitably assumed

PART – A

Answer any five questions.

(5x2=10 Marks)

- 1 Classify Indian Railways based on the importance of route and traffic carried.
- 2 Define creep and explain the occurrence of creep.
- 3 What is the necessity of points and crossings?
- 4 What is the equilibrium cant on a 2° curve on a broad gauge if 15 trains, 10 trains, 5 trains and 2 trains are running at speeds of 50 kmph, 60 kmph, 70 kmph and 80 kmph respectively?
- 5 What are the reasons for relaying a railway track?
- 6 Write any four requirements of track drainage system?
- 7 Give the classification of aircrafts based on type of propulsion.
- 8 Draw a typical lay-out of an airport and identify the various details.
- 9 What is the data required before the actual site selection of an airport?
- 10 Explain with a neat sketch the engine failure case.

PART – B

Answer any four questions.

(4x15=60 Marks)

- 11 (a) Discuss the factors which control the alignment of a railway track.
 (b) Using a sleeper density of $n+5$, find out the number of sleepers required for constructing a B.G. railway track 680 metres long.
- 12 (a) What do you understand by “Negative super elevation”? When from a layout of B.G. yard, a 8° curve branches off from a 4° main curve in an opposite direction. If speed is restricted to 28.95 kmph and permissible value of cant deficiency is 7.61 cm, determine the speed restriction on the main line.
 (b) Draw a neat sketch of a right hand turnout and identify the various details.
- 13 (a) Why it is necessary to provide adequate drainage facilities for a railway track?
 (b) What do you understand by maintenance of track components? Name the various components mentioning the measures to be taken for their maintenance.
- 14 (a) Enumerate and explain the various aircraft characteristics in detail.
 (b) Explain briefly the necessity of parking area and hangar in an airport.
- 15 Explain the factors to be considered for the site selection of a major airport installation.
- 16 (a) If the wheel base of a vehicle moving on a B.G. track is 6m, the diameter of the wheel is 1.5m and the depth of flange below the top of rail is 3.17cm. Determine the extra width required to be provided on gauge, if the radius of the curve is 160m.
 (b) Classify sleepers and explain the merits and demerits of each one of them.
- 17 Write short notes on the following:
 - (i) Coning of wheels
 - (ii) Reasons for changing the orientation of a runway
 - (iii) Cross wind component.