Code No. 2661/ CBCS/BL

FACULTY OF ENGINEERING

B.E. (Civil) VI – Semester (CBCS) (Backlog) Examination, November 2020

Subject: Transportation Engineering – II

Time: 2 Hours **Max.Marks: 70**

Note: Answer any five questions form Part-A and any four questions from Part-B

PART – A (5x2 = 10 Marks)

1 List the various surveys for railway alignment?

2 What is meant by coning of wheels?

3 Find the compensated gradient on a 2° curve for a BG line with a ruling gradient of 1 in 200.

4 Define cant deficiency and cant excess.

5 Why is maintenance of track necessary?

6 What are the three methods of plate-laying?

7 Write any four characteristics of an aircraft.

8 What are the components of a terminal building?

9 Why corrections are needed for a basic runway length?

10 What are the four basic configurations of runways?

PART – B (4x15 = 60 Marks)

11 a) What is creep? Discuss the theories propounded for the possible causes of creep in rails.

b) What is sleeper density and how it is expressed? What are the advantages and disadvantages of concrete sleepers?

12 a) Derive an expression to establish relationship among gauge, speed, radius of curvature and superelevation.

b) Compute the maximum permissible speed for the following data on a curve of high speed B.G route for the following data: degree of curve = 1°, superelevation = 80 mm, length of transition curve = 120 m, maximum sanctioned speed likely to be 160 kmph.

13 a) Explain how the maintenance of the surface of rails is done?

b) Explain in detail the various stages in the construction of a new railway track.

14 a) Why it is necessary to have careful planning and design of the terminal area?

b) What are the characteristics of a well-planned airport layout?

15 a) What is a wind rose diagram? What is its utility? What are its types? Explain each type.

b) An airport is proposed at an elevation of 300m above mean sea level. The maximum and average daily temperatures for the hottest month of the year at the site are 45°C and 27°C respectively. The maximum difference in elevation along the proposed profile of the runway is 144m.Determuine the actual length of the runway to be provided.

16 a) What are the various functions and requirements of rails in a railway track?

b) What do you understand by the term basic runway length? Explain the procedure of determining the actual runway length required at particular site.

17 Write short notes on any ***four*** of the following:

a) Track fittings & fastenings

b) Types of gradients

c) Track alignment

d) Airport classification as per ICAO

e) Runway geometric design elements.

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