Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 70362

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Seventh Semester

Civil Engineering

CE 8702 – RAILWAYS, AIRPORTS, DOCKS AND HARBOUR ENGINEERING

(Regulations – 2017)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the function of rails.
2. Define three types of rail gauges.
3. Identify the purpose of disc or ground signals.
4. Mention the types of maintenance of railway tracks.
5. Define 'ICAO'.
6. Discuss the parking area of an airport.
7. Compare the taxiway and runway lighting.
8. Outline the purpose of wind direction indicator.
9. Differentiate Harbour and Port.
10. Mention the purpose of providing Dolphin.

PART B — (5 × 13 = 65 marks)

11. (a) With a neat cross section elaborate on different components of the permanent way. (13)

Or

(b) Discuss on the various types of rail joints and defects in rails. (13)

12. (a) Illustrate different types of way side railway stations on double and triple line. Also discuss with neat sketches on junction and terminal stations. (13)

Or

(b) List out the various construction methods of constructing railway tracks. Explain on any two in detail (13)

13. (a) Explain the various factors involved in selection of a site for an airport. (13)

Or

(b) Explain with a neat sketch of various amenities and components in a terminal building and surrounding area of an airport. (13)

14. (a) Make use of diagrams and calculate runway length for three cases. Also list out the formulas for runway length correction. (13)

Or

(b) Draw a neat sketch showing a runway and taxiway with all required marking. Also highlight on its necessities. (13)

15. (a) Elaborate on different types of harbours with respect to formation and usage. (13)

Or

(b) Write short notes on

(i) Quays (4)

(ii) Fenders (4)

(iii) Jetties (5)

PART C — ($1 \times 15 = 15$ marks)

16. (a) Draft a case study of an airport, mentioning its important features and specifications. (15)

Or

(b) The length of runway at standard condition is 2500m. Determine the required runway length at an airport site with the following data:

Mean maximum daily temperature = 43.5 degree Celcius

Mean average daily temperature = 27.3 degree Celcius

Elevation of the site above MSL = 340 m

Effective gradient of runway = 0.18%. Assume any other relevant data if required. (15)