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

Question Paper Code : 90337

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

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. What are the functions of Ballast?
2. Define kinks of rails.
3. What is the main purpose of detonators in railway signaling?
4. List the various methods of plate laying in the construction of a new railway track.
5. What are the factors influencing the size of an airport?
6. Why should airports be spaced apart sufficiently?
7. Define calm period.
8. Write the characteristics of taxiway centre line lights.
9. List any four limitations of water transport.
10. What do you mean by jetties?

PART B — (5 × 13 = 65 marks)

11. (a) Illustrate the various classifications in railways and the context in which different classes of gradients are applied in Indian Railways.

Or

(b) Elaborate the various types of horizontal and vertical curves in a railway alignment with neat sketch.

12. (a) Summarize the different types of railway stations with their layout diagrams.

Or

(b) Explain the various methods of track maintenance for the easy movement of trains.

13. (a) Illustrate the various surveys conducted and information collected for the site selection of an airport.

Or

(b) Classify different aircraft parking layout patterns using neat sketches.

14. (a) Explain various types of imaginary surfaces and their characteristics with neat sketch.

Or

(b) Elaborate the various types of markings on a runway with neat diagrams.

15. (a) Summarize the various classification of primary and subsidiary classification of harbours.

Or

(b) Explain the methods and classification of breakwaters for reducing wave motion, as well as the benefits and drawbacks of breakwaters.

PART C — (1 × 15 = 15 marks)

16. (a) In a BG yard layout, there is an unsymmetrical split of 3° and 5° curves from main line and branch line respectively. If the speed restrictions on main line is 60 kmph. Calculate the restricted speed on branch line after allowing maximum cant deficiency.

Or

(b) An airport is planned to construct at an elevation of 800 m above mean sea level. In that place the mean of maximum and mean of average daily temperature of the hottest month are 316 K (kelvins) and 302 K (kelvins) respectively. Maximum elevation difference along the proposed profile of a runway is 8 m. Basic runway length is 1700 m. Calculate the actual length of runway and classify the runway depending its actual length.

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