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

Question Paper Code : 50350

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 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. Enlist the instruments used in the preliminary Survey.
2. Define Super elevation.
3. Define Heel Divergence.
4. Distinguish between the point rail and splice rail.
5. State the various imaginary surfaces around the airport.
6. Define Cross Wind component and wind coverage.
7. State the purpose of IFR.
8. Indicate how runway numbering is done.
9. Define Wharf and Jetty.
10. State the various features of harbour.

PART B — (5 × 13 = 65 marks)

11. (a) Explain a permanent way with a neat sketch. Explain the basic requirements of an permanent way.

Or

(b) State the joints in rails. Explain the various types of joints in railway with neat sketches.

12. (a) Discuss on the types of signal in railway. Elaborate on signal based on function and location.

Or

(b) Explain with a neat diagram of simple right hand turnout and also elaborate on the working principal of turnout.

13. (a) Discuss in detail the factors affecting the choice of the Selection of Site for an Airport.

Or

(b) Explain in detail about the various types of airport zoning.

14. (a) Explain in detail the various types of lightings involved in Airport with neat sketches.

Or

(b) Describe in detail about the various systems involved in airport runway marking with neat sketches.

15. (a) Briefly explain the types of Signals used in Harbours with a neat sketch.

Or

(b) Discuss in detail about the harbour planning and layout with neat diagram.

PART C — (1 × 15 = 15 marks)

16. (a) The length of the runway under the Standard condition is 1500 m. The airport site has an elevation of 300 m. And the reference temperature of the airport is 34 degree Celcius. It is required to construct the runway with an effective Gradient of 0.27%. Determine the corrected length of the Runway.

Or

(b) Elaborate on the type 1 and type 2 wind rose diagram with neat sketches. Also discuss on factors to be considered for orienting a runway by citing a case study.

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