

Question Paper Code : 71255

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

Fifth Semester

Civil Engineering

CE 2303/CE 52/10111 CEE 49 — RAILWAYS, AIRPORTS AND HARBOUR
ENGINEERING

(Regulation 2008/2010)

(Common to PTCE 2303/10111 CEE 49 – Railways, Airports and Harbour
Engineering for B.E. (Part-Time) Fourth Semester – Civil Engineering – Regulation
2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define sleeper density.
2. Sketch the cross-section of the permanent way.
3. List the type of signals based upon functional characteristics.
4. What is a buffer stop?
5. List any two factors which affect the runway design.
6. What is Air Traffic Potential?
7. What is a Hangar?
8. What are the various airport zones?
9. What are the types of harbour?
10. What is a breakwater? Name its types.

PART B — (5 × 16 = 80 marks)

11. (a) What is a sleeper? List the functions, types of sleepers and compare one another. (16)

Or

- (b) (i) What do understand by 'cant deficiency'? (8)
- (ii) Explain the widening of gauge on curves with the formula. (8)

Or

- (b) How are Railway stations classified? Explain the features of each station. (16)

13. (a) The length of a runway under standard condition is 2100 m. The airport is to be provided at an elevation of 410 m above MSL. The airport reference temperature is 32°C. The construction plan provides the following data.

End to end of runway (m)	Grade (%)
0-300	+1.0%
300-900	-0.5%
900-1500	+0.5%
1500-1800	+1.0%
1800-2100	-0.5%
2100-2700	-0.4%
2700-3000	-0.10%

Determine the length of the runway. Apply the correction for elevation and temperature as per ICAO and the correction for gradient as per FAA.

(16)

Or

- (b) What is a wind-rose diagram? What is its importance in airport engineering? Differentiate type 1 and type 2 wind-rose diagrams. (16)

14. (a) Briefly explain the Night - time aids provided at Airports. (16)

Or

- (b) Explain with neat sketches, about the Airport Markings. (16)

15. (a) Explain about the different types of break waters with the sketches. (16)

Or

- (b) What are the types of Navigational Aids? Discuss the fixed navigation structures and floating navigation aids. (16)