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Question Paper Code : P 1149

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

Fifth Semester

Civil Engineering

CE 1303 — RAILWAYS, AIRPORTS, DOCKS AND HARBOURS

(Regulation 2004)

Time : Three hours Maximum : 100 marks

Graph paper will be supplied on Request.

Assume suitable data if anything is missing.

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the disadvantages of coning of wheels and how are they rectified?

2. Define widening of gauge in Railway geometric design.

3. Distinguish between crossings and cross-overs.

4. What is the necessity of track circuiting?

5. Define wind coverage.

6. What is meant by buffer zone?

7. Mention the factors affecting the locations of Exit taxi-way.

8. Draw a typical pattern of 'Motor Vehicle Parking' in an airport.

9. What is the purpose of jetty?

10. Distinguish between "Quay wall" and "Pier".

PART B — (5 × 16 = 80 marks)

11. (a) Illustrate with sketches the different types of surveys to be carried out for a new railway project, and briefly outline how it is different from that of a high project.

Or

(b) (i) What are the objects of providing transition curve in Railways? Explain briefly how the length of the transition curve is decided. (8)

(ii) List the various types of sleepers. Describe their merits and demerits. (8)

12. (a) (i) Draw a neat sketch of a left hand turnout and show the various components. (8)

(ii) Explain the various types of marshalling yards. (8)

Or

(b) Explain the different systems of controlling train traffic.

13. (a) (i) Discuss the factors that control the length of a runway. (6)

(ii) Explain with neat diagrams the basic runway patterns. (10)

Or

(b) The table below shows the typical wind data for an airport site. Determine the best orientation of the runway and percentage of time during which the runway can be used

Wind Direction	Percentage of time		
	6-25 KMPH	25-50 KMPH	50-80 KMPH
N	4.60	1.40	0.10
NNE	3.40	0.75	0.00
NE	1.80	0.03	0.10
ENE	2.80	0.02	0.03
E	2.10	2.20	0.00
ESE	5.40	4.75	0.00

Wind Direction	Percentage of time		
	6-25 KMPH	25-50 KMPH	50-80 KMPH
SE	6.40	1.40	0.00
SSE	7.50	0.02	0.00
S	4.60	1.40	0.10
SSW	2.40	0.75	0.00
SW	1.20	0.03	0.10
WSW	3.60	0.02	0.03
W	1.80	2.20	0.00
WNW	6.00	4.75	0.00
NW	5.90	1.40	0.00
NNW	6.80	4.90	0.30

14. (a) (i) Draw a layout of any one international airport in India. and explain the concept. (8)

(ii) List out various instructions employed for air traffic control. Explain briefly. (8)

Or

(b) Write short notes on the following :

(i) Passenger facilities in airport (4)

(ii) Lighting at taxiway turn off (4)

(iii) Runway markings (4)

(iv) Helipads. (4)

15. (a) (i) Draw a neat sketch of a typical harbour and indicate the salient components. (8)

(ii) Explain the design principles of a wet dock. How a wet dock differs from a tidal basin? (8)

Or

(b) What is a breakwater? What are the causes for failure of a break water and suggest remedies? Enlist the types of breakwaters commonly used with construction procedure.