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

Q 2123

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Sixth Semester

Civil Engineering

CE 338 — TRANSPORTATION ENGINEERING — II

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the different gauges.

2. Define ballast.

3. What is track circuiting?

4. Define GIS.

5. What is basic runway length?

6. Define cross wind component.

7. What is a container?

8. What are ropeways?'

9. What is NPV?

10. Define BOT.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain with examples the *obligatory points* of railway alignment. How is the alignment of a new railway line determined? (8)

(ii) Describe the different types of rail joints with the help of sketches. Indicate the fixtures used. (8)

Or

(b) (i) What are the advantages of concrete sleepers? Show how the rail may be fastened to a concrete sleeper. (8)

(ii) An 8° curve diverges from a 5° main curve in reverse direction in the layout of a BG yard. Compute the super elevation and the speed on the branch line, if the maximum speed permitted on the main line is 45 kph. Assume cant deficiency to be 76 mm. (8)

12. (a) (i) Draw a neat sketch of a right-hand turnout. Discuss the working principle of the turnout. (8)

(ii) Describe the classification of railway signals. Indicate the positions of locational signals. (8)

Or

(b) (i) Draw the layout of a terminal station and explain the facilities to be provided. (8)

(ii) Discuss the modern methods of construction and maintenance of railway track. (8)

13. (a) (i) Discuss the characteristics of aircraft that influence the design of airport facilities. (8)

(ii) Draw a typical layout of a runway-taxiway system and explain its operation. (8)

Or

(b) (i) Discuss the factors to be considered while locating an international airport. (8)

(ii) What is an approach zone? Describe the landing procedure of an aircraft. (8)

14. (a) (i) Distinguish between wet and dry docks. Sketch a typical dry dock. (8)

(ii) What are the functions of a breakwater? Discuss the different types of breakwaters in use. (8)

Or

(b) (i) What are the storage structures in a port? Explain the facilities available in them. (8)

(ii) Describe the various navigational aids used in harbours. (8)

15. (a) (i) What is benefit-cost ratio? Explain its significance in the evaluation of railway projects. (8)

(ii) Why is Environmental Impact Assessment important? Enumerate the environmental impacts of highway projects. (8)

Or

(b) (i) Discuss the pros and cons of private sector participation in highway projects. (8)

(ii) What is internal rate of return? Discuss its role in economic evaluation. (8)