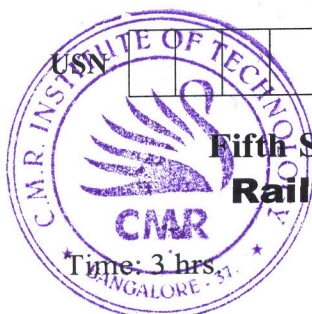


# CBCS SCHEME

15CV552



## Fifth Semester B.E. Degree Examination, June/July 2023 Railways, Harbour, Tunneling and Airports

Max. Marks: 80

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. State the relative merits and demerits of flat footed rails and bull headed rails. (08 Marks)  
b. Define creep. What are the causes, effects and prevention of creep? (08 Marks)

OR

- 2 a. Briefly explain the advantages and disadvantages of any four types of ballast. (08 Marks)  
b. If a 6 degree curve track branches off from a main 4 degree curve in an opposite direction in the layout of a B.G yard, calculate the super elevation and the speed on the branch line if the maximum speed on the main line is restricted to 45 km.ph. (08 Marks)

### Module-2

- 3 a. What are the functions of railway stations? Discuss the various requirements of a railway station. (08 Marks)  
b. Explain briefly the different type of station yards. With the aid of neat sketch explain the functioning and type of a marshalling yard. (08 Marks)

OR

- 4 a. Why it is necessary to provide adequate drainage facilities for a railway track? Mention the requirement of good drainage system. (08 Marks)  
b. Draw a neat sketch of left hand turnout and list the various parts. (08 Marks)

### Module-3

- 5 a. List and briefly explain the classification of harbour based on protection needed, and location. (08 Marks)  
b. Define tunnel. Explain the shapes of tunnel with neat sketch. (08 Marks)

OR

- 6 a. Describe the components of harbour with neat sketch. (08 Marks)  
b. Write a note on tunnel ventilation and tunnel lining. (08 Marks)

### Module-4

- 7 a. Discuss the characteristics of air transport. (04 Marks)  
b. Enumerate the classification of airports based on ICAO and FAA. (06 Marks)  
c. Mention the objectives of airport planning. (06 Marks)

OR

- 8 a. Sketch the typical airports showing different types of runways. (08 Marks)  
b. Explain the various factors which you would keep in view while selecting a suitable site for an airport. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

**Module-5**

- 9 a. Explain the procedure for orienting runway using windrose diagram. (08 Marks)  
b. Mention the factors governing the layout and location of taxiways. (08 Marks)

OR

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- 10 a. Explain the various types of air port marking. (08 Marks)  
b. An air port is planned at an elevation of 380mt above MSL. The monthly mean of maximum and average daily temperatures for the hottest month at the site are 40°C and 28°C respectively. The effective gradient is 0.18%. Determine the length of runway required at the proposed site if the basic runway length is 1900mt. (08 Marks)

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