

CBCS SCHEME

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Fifth Semester B.E. Degree Examination, June/July 2018 Railways, Harbours, Tunneling and Airports

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. What do you understand by a railway track or permanent way? Mention the requirements of an ideal permanent way. (08 Marks)
- b. Explain with neat sketch, coming of wheels. What are the advantages of it? (08 Marks)

OR

- 2 a. What is meant by wear of rails? How do you classify wear? Discuss the various causes of wear. (08 Marks)
- b. A 5° curve diverges from 3° main curve in the reverse direction in the layout of a B.G Yard. If the speed on the branch line is restricted to 35 kmph, determine the restricted speed on the main line (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. Enlist the components of a harbour. Give neat sketches of the layouts of an artificial harbour and roadstead. (08 Marks)
- b. Define breakwater. Explain any one type of breakwater. (08 Marks)

OR

- 6 a. Explain the advantages of tunnels. Mention the different shapes of tunnels adopted for roads and railways with a neat sketch. (08 Marks)
- b. List the methods of tunneling in hard rocks and explain any one method in detail. (08 Marks)

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Module-4

- 7 a. List the various elements of an airport and explain them with a neat sketch. (08 Marks)
b. Write a note on air craft characteristics. (08 Marks)

OR

- 8 a. What are the characteristics of an ideal air port layout? Sketch typical layout of an air port showing essential elements. (08 Marks)
b. Describe five major characteristics influencing planning and design of airport elements. (08 Marks)

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

- 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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