

CBCS SCHEME



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15CV552

Fifth Semester B.E. Degree Examination, Aug./Sept.2020 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. Explain permanent way components with the help of a neat sketch. (08 Marks)
b. List the function of Rails. Also discuss the various types of rails. (08 Marks)

OR

- 2 a. Enumerate the surveys that should be carefully conducted to fix a best possible route alignment. (08 Marks)
b. What is the equilibrium cant on a 2° curve on a B.G. if 15 trains, 10 trains, 5 trains and 2 trains are running at a speed of 50 kmph, 60 kmph, 70 kmph and 80 kmph respectively. (08 Marks)

Module-2

- 3 a. Classify station. Illustrate the features of each station. (08 Marks)
b. List and explain the methods of earthwork stabilization of track on poor soil with neat sketches. (08 Marks)

OR

- 4 a. Enumerate Marshalling yard. With neat sketch explain the working of Hump type of marshalling yard. (08 Marks)
b. Discuss the modern methods of construction and maintenance of tracks. (08 Marks)

Module-3

- 5 a. Classify Harbours on broad basis and on the basis of utility and explain them. (08 Marks)
b. Write short note on :
(i) Tunnel ventilation (ii) Tunnel Drainage. (08 Marks)

OR

- 6 a. Explain the different types of Breakwaters. (08 Marks)
b. Name the various methods of tunneling in hard rock and soft soil. Describe the forepoling method or drift method in detail. (08 Marks)

Module-4

- 7 a. List the different type of airport. Explain the ICAO classification of airports. (08 Marks)
b. Discuss in detail the factors affecting the choice of selection of site for an airport. (08 Marks)

OR

- 8 a. With the help of neat sketch, explain the various elements of an airport. (08 Marks)
b. Illustration the typical airport layout for the basic runway configuration. (08 Marks)

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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. What are the various corrections to be applied on to the runway length? Indicate the equations used in applying corrections. (08 Marks)
- b. Explain the Type1 wind rose diagram for orienting the runway. (08 Marks)

OR

- 10 a. Briefly explain the night time aids provided at airports. (08 Marks)
- b. Determine the corrected length of runway for an airport site with following data: (08 Marks)
- (i) Basic runway length = 2520 m
 - (ii) Elevation of airport = 500 m
 - (iii) Airport reference temperature = 21°C
 - (iv) Runway effective gradient = 0.2%

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