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15CV552

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 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. Discuss the significance of road, rail, water and air transport. (06 Marks)
- b. What are the functions and requirements of ballast? (05 Marks)
- c. Illustrate the constituents of right hand turnout in detail. (05 Marks)

OR

- 2 a. Explain the conventional methods of route alignment survey. (08 Marks)
- b. What should be the equilibrium Cant on a M.G curve of 5° for an average speed of 60 kmph? Also find out the maximum permissible speed after allowing the maximum Cant deficiency. (08 Marks)

Module-2

- 3 a. Describe the stabilization of track on poor soil. (08 Marks)
- b. Explain the modern methods of maintenance of railway track. (08 Marks)

OR

- 4 a. Define yards. Explain the types of yards. (08 Marks)
- b. Evaluate the quantity of materials required to construct 1.5km long BG track. Take sleeper Density = $(m + 6)$, Length of Rail = 13m. (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)



Module-5

- 9 a. Define orientation of runway. Briefly explain the procedure of plotting Type-II wind Rose diagram. (08 Marks)
b. Explain the different types of Markings used in airport. (08 Marks)

OR

- 10 a. Describe the elements of taxiway geometric design. (08 Marks)
b. Calculate the actual length of runway from the following data:
(i) Airport elevation : R.L 100
(ii) Airport Reference Temperature : 28°
(iii) Basic Runway length : 600 m
(iv) Highest Point along the length : R.L 98.2
(v) Lowest point along the length : R.L 95.2 (08 Marks)

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