



Fifth Semester B.E. Degree Examination, Jan./Feb. 2023 Highway Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain the different planning surveys to be conducted before finalizing the alignment. (08 Marks)
b. Mention the Jayakar committee recommendations and its implementations. (08 Marks)
c. Write a note on NHDP. (04 Marks)

OR

- 2 a. Explain the classification of roads based on function and location. (08 Marks)
b. Explain the concept behind saturation system of road planning. (04 Marks)
c. Write a note on : (i) IRC (ii) Urban roads. (08 Marks)

Module-2

- 3 a. Define Alignment. Explain the factors controlling alignment. (09 Marks)
b. What is Reaction Time? Explain the reaction time by using PIEV theory. (05 Marks)
c. Define super elevation. Explain the attainment of super elevation in the field. (06 Marks)

OR

- 4 a. Explain the different types of gradients used in roadways. (08 Marks)
b. Write a note on : (i) Shoulder (ii) Camber (iii) Drive way. (09 Marks)
c. What concept involved in widening of pavement on horizontal curves? (03 Marks)

Module-3

- 5 a. With a neat sketch, explain the functions of component parts of pavement. (10 Marks)
b. List the tests to be conducted on road aggregates. Explain impact test in detail. (10 Marks)

OR

- 6 a. Explain the desirable properties of subgrade soil. (08 Marks)
b. Distinguish Tar and Bitumen. (05 Marks)
c. Explain the desirable properties of road aggregates. (07 Marks)

Module-4

- 7 a. Explain the procedure involved in the preparation of subgrade layer along with quality control tests. (10 Marks)
b. Mention the procedure followed in WBM layer preparation along with quality control methods. (10 Marks)

OR

- 8 a. Write a note on earthwork in cutting and filling. (10 Marks)
b. Explain the procedure of concrete roads preparation. Also write the specification of materials used along with quality checks. (10 Marks)

Module-5

- 9 a. With neat sketches, explain the different methods of providing subsurface drainage system. (12 Marks)
b. Write a note on : (i) B-C ratio method (ii) IRR method. (08 Marks)

OR

- 10 a. Mention the significance of highway drainage. (06 Marks)
b. Explain about surface drainage system. (06 Marks)
c. Write a note on BOT and BOOT. (08 Marks)
