

CBCS SCHEME



18CV733

Seventh Semester B.E. Degree Examination, July/August 2022 Pavement Materials & Construction

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. List and explain the desirable properties of road aggregates. State the tests conducted for each property. (10 Marks)
b. With a neat sketch, explain impact test. (10 Marks)

OR

- 2 a. With the help of graph, explain Roth futch's method for gradation of aggregates. (10 Marks)
b. Write the properties of bitumen. Any 4 explain. (04 Marks)
c. List the differences of bitumen and tar. (06 Marks)

Module-2

- 3 a. Discuss the details of cutback and its types. (10 Marks)
b. Explain the uses of bitumen emulsion. How are they prepared? (10 Marks)

OR

- 4 a. List and explain the mechanism of stripping. (10 Marks)
b. Explain in detail, the static immersion test. (10 Marks)

Module-3

- 5 a. List and explain the requirements of bituminous mixes. (10 Marks)
b. Explain how the bitumen content is determined. (Extraction test) (10 Marks)

OR

- 6 a. Explain the preparation and specifications of stability test by Marshall method. (08 Marks)
b. The specific gravities and weight proportions for aggregates and bitumen are as under for the preparation of Marshall mix design. The volume and weight of one Marshall specimen was found to be 475 CC and 1100 gm. Assuming absorption of bitumen in aggregate is zero.

Find V_v , V_b , VMA and VFB

Item	A - 1	A - 2	A - 3	A - 4	B
Wt (gm)	825	1200	325	150	100
Sp. gr.	2.63	2.51	2.46	2.43	1.05

(12 Marks)

Module-4

- 7 a. What is a power shovel? With a neat sketch, explain its operation and application. (10 Marks)
b. List and explain the steps used in the preparation of subgrade. (10 Marks)

OR

- 8 a. What are the different types of compacting equipments used for pavement construction? Write an explanatory note on rollers in road construction. (10 Marks)
b. What are the desirable properties subgrade soil? (04 Marks)
c. List out the quality control tests for construction of highway subgrade. (06 Marks)

Module-5

- 9 a. Mention the specification of materials, construction steps and quality control tests for laying bituminous binder course. (12 Marks)
- b. Explain the construction steps and specification for granular sub-base course. (08 Marks)

OR

- 10 a. What are the requirements of a good joint? Explain briefly with diagram of expansion joint. (10 Marks)
- b. Briefly describe the quality control tests used in construction of concrete pavements. (10 Marks)
