



Seventh Semester B.E. Degree Examination, Jan./Feb.2021
Pavement Materials and Construction

Time: 3 hrs.

Max. Marks: 100

- Note:** 1. Answer FIVE full questions, selecting at least TWO questions from each part.
 2. Assume missing data suitably.

PART – A

- 1 a. Explain the requirements and desirable properties of road aggregates. (10 Marks)
- b. List out the laboratory tests on road aggregates and with neat sketch, explain the impact value test on aggregate. (10 Marks)
- 2 a. What is meant by Bitumen and Tar, briefly summarise the properties of Bitumen and Tar. (10 Marks)
- b. Enumerate the preparation of Bitumen for pavement. (04 Marks)
- c. Discuss the requirements necessary for Bitumen and Tar. (06 Marks)
- 3 a. List out the various characteristics and uses of Bitumen emulsion. (08 Marks)
- b. Define the term Cut back bitumen? Explain the distillation process of Cut back bitumen test. (06 Marks)
- c. Explain the mechanism of Stripping value test. (06 Marks)
- 4 a. List out the desirable properties of Bituminous mixer. (06 Marks)
- b. Explain the concept of Marshall stability test on bituminous MIX. (08 Marks)
- c. Explain briefly the voids in mineral aggregates and voids filled with bitumen. (06 Marks)

PART – B

- 5 a. Explain with neat sketch of pneumatic tyred roller compaction and mention their advantages and limitations. (10 Marks)
- b. Describe with neat diagram of power shovel for excavation, and its advantages. (10 Marks)
- 6 a. Explain the construction steps of highway embankment and briefly summarise about quality control tests. (08 Marks)
- b. What are the steps used in the preparation of subgrade? (06 Marks)
- c. Discuss the quality control tests for construction of highway subgrade. (06 Marks)
- 7 a. Explain the field control checks for Bituminous Macadam base course. (08 Marks)
- b. Write a note on components of flexible pavements. (04 Marks)
- c. Draw a neat sketch and explain clearly the construction method of Bituminous bound Macadam pavement. (08 Marks)
- 8 a. Explain with neat sketch, show the alternate bay method for cement concrete pavement construction and mention their advantages and draw backs. (10 Marks)
- b. What are the requirements of a good joint? Explain briefly with diagram of expansion joint. (10 Marks)

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