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10CV763

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019
Pavement Materials and Construction

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. List the types of tests to be conducted on road aggregates. Explain :
i) Impact test ii) Los Angles abrasion test. (12 Marks)
- b. With the aid of graph explain Roth Futch's method for gradation of aggregates. (08 Marks)
- 2 a. Explain how bitumen is produced from crude oil. (06 Marks)
- b. Write the properties of bitumen. (06 Marks)
- c. List the differences of bitumen and tar. (08 Marks)
- 3 a. Discuss the details of cutback and its types. (10 Marks)
- b. Mention the significance of bitumen adhesion to aggregates. Explain how the bitumen adhesion is evaluated. (05 Marks)
- c. Write a note on Emulsion. (05 Marks)
- 4 a. Explain how the optimum bitumen content is determined. (10 Marks)
- b. The specific gravities and weight proportion for aggregates and bitumen are as under the preparation of Marshal misc design. The volume and weight of one Marshall specimen was found to be 475CC and 1100 gm. Assume absorption of bitumen in aggregate is zero, find V_v , V_b , VMA and VFB.

Item	A – 1	A – 2	A – 3	A – 4	Bitumen
Wt (gm)	825	1200	325	150	100
Sp. Gr	2.63	2.51	2.46	2.43	1.05

(10 Marks)

PART – B

- 5 a. With neat sketch explain : i) Drag line ii) Power shovel. (10 Marks)
- b. Discuss the various factors that control the design of highway embankment. (10 Marks)
- 6 a. Explain the objects of compaction and effect of inadequate compaction. Discuss the advantages and applications of various compacting equipment for construction of subgrade and embankments. (10 Marks)
- b. Enumerates the steps for preparation of subgrade. Explain the various quality control tests carried out during the preparation of subgrade. (10 Marks)
- 7 a. Explain the construction steps and specification for bituminous concrete pavement. (10 Marks)
- b. Write a note on construction of Dense bituminous macadam pavement. (10 Marks)
- 8 a. Explain : i) Expansion Joints ii) Contraction joints. (10 Marks)
- b. Write the specifications of material for cement concrete pavement slabs. (10 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.