10CV763

Seventh Semester B.E. Degree Examination, June/July 2017
Pavement Materials and Construction

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
atleast TWO questions from each part.

PART – A

1 a. Explain the desirable properties of aggregates to be used in different types of pavement construction. **(10 Marks)**
   b. What are the various tests for judging the suitability of road stone for pavement construction? Discuss the objects of carrying out each of these tests. **(10 Marks)**

2 a. How is bitumen produced? **(05 Marks)**
   b. Enumerate the properties of bitumen and tar. **(07 Marks)**
   c. What are the tests conducted on bitumen? Mention the importance of each. **(08 Marks)**

3 a. Explain the uses of bitumen emulsion. How are they prepared? **(10 Marks)**
   b. List the different types of cutbacks. When are these used? **(10 Marks)**

4 a. List and explain the desirable properties of a bituminous mix. **(10 Marks)**
   b. Explain the procedure of determining the optimum bitumen content, for a bituminous mix, by Marshall test. **(10 Marks)**

PART – B

5 a. Explain the procedure of the compacting equipment used for highway construction. Mention its specific use. **(10 Marks)**
   b. Mention the special equipments for bituminous and cement concrete pavement construction **(10 Marks)**

6 a. Explain construction of embankments and cuts of roads. **(10 Marks)**
   b. Enumerate the steps in the preparation of subgrade. How is the adequacy of the compaction in the field evaluated? **(10 Marks)**

7 a. Mention the specification of materials, construction steps and quality control tests for laying bituminous macadam binder course. **(10 Marks)**
   b. Write explanatory notes on :
   i) Penetration macadam base
   ii) Built-up spray grout base. **(10 Marks)**

8 a. Draw a neat diagram showing various component layers of a CC pavement structure. Mention the objectives of each lay.
   b. Briefly explain with neat sketches the method of construction of :
   i) Contraction joints
   ii) Expansion joints
   iii) Construction joints
   iv) Longitudinal joints. **(20 Marks)**

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