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B.E./B.Tech (Full Time) DEGREE END SEMESTER EXAMINATION JAN 2022

CIVIL ENGINEERING BRANCH

SEVENTH SEMESTER

(REGULATIONS 2015)

CE7019 – PAVEMENT ENGINEERING

Time : 3 Hours

Max Marks : 100

PART –A (10 x 2 = 20 Marks)

- 1 List the types of pavements.
- 2 What are the layers of Rigid and Flexible pavement?
- 3 What are the materials used in Rigid and Flexible pavement?.
- 4 State the relevance of Dowel Bars and Tie Bars.
- 5 What are the physical properties of aggregates in bituminous pavements?
- 6 Differentiate between Flash Point and Fire Point test of Bitumen?
- 7 Define Modified Binders
- 8 Define Elongation Index of aggregates?
- 9 What is the critical region of stresses in CC pavement?
- 10 What do you understand by Present Serviceability Index?

PART – B (5 x 13 = 65 Marks)

11a) Discuss the layers in pavements and state the difference between Flexible and Rigid Pavement. **(13marks)**

(OR)

11b) Discuss the factors considered in the design of Flexible Pavement **(13marks)**

12a) Explain the CBR test procedure to assess the strength of soil **(13marks)**

(OR)

12b) Discuss the following: **(13marks)**

- i. Types of concrete pavement.
- ii. Load Transfer Efficiency

13a) Discuss Flakiness test of aggregate and Softening Point test of Bitumen. **(13marks)**

(OR)

13b) Explain the Marshall method of mix design of Bituminous Mixes. **(13marks)**

14a) Explain any 2 failures each in flexible and rigid pavements **(13marks)**

(OR)

14b) Discuss the following: **(13marks)**

i. Bitumen emulsion.

ii. Prime coat and Tack Coat.

iii. Give reason for replacing Penetration Grade with Viscosity Grade of bitumen and list the types of VG grading.

15a) Explain the construction procedure for flexible pavements **(13marks)**

(OR)

15b) Discuss the various methods of soil stabilization. **(13marks)**

PART – C (1 x 15 = 15 Marks)

16) Explain briefly the Marshall Method of Mix Design for bituminous pavement **(15marks)**