Unit IV

7. (a) Classify different types of joints in CC pavements and mention the objects of each. **7**

(b) How is axle load distribution studies carried out for the purpose of rigid pavement design ? **8**

8. (a) What are the objects of providing dowel bars in CC pavements ? Explain. **8**

(b) What are the functions of tie bars in rigid pavements ? **7**

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AA-721

M. Tech. EXAMINATION, May 2017

(First Semester)

(B. Scheme) (Re-appear Only)

CE(HSE)

CEH-501

PAVEMENTS DESIGN

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) Briefly outline the advantages and limitations of flexible pavements. **8**

(b) Draw a sketch of flexible pavement cross-section and show the component parts. Enumerate the functions and importance of each component of the pavement. **7**

2. (a) Discuss the importance of gross wheel load and contract pressure in stress distribution pattern and in pavement design. Illustrate with stress distribution diagram. **7**

(b) Determine VDF of the following two axle loads in terms of the standard axle load of 8.16 t : **8**

(i) LCV with rear axle load 1.8 t

(ii) HCV with rear axle load 16.0 t

Unit II

3. (a) What is the effect of using superior pavement material in flexible pavement ? **7**

(b) Explain, how climatic variation affects pavement design and performance ? **8**

4. Explain briefly the principle of Burmister's two layer theory and mention the advantages over the elastic single layer theory for the analysis of flexbile pavements. **15**

Unit III

5. The initial traffic after completion of construction of a four lane divided highway is estimated to be 5600 cv per day. Design the flexible pavement for a life of 15 years using the data given below :

Design CBR value = 10%, growth rate of CV = 6.5% p.a., Avg. VDF of CV = 4.0. **15**

6. Discuss empirical methods of flexible pavement design. Also write the advantages and limitations of empirical design methods. **15**