Growth rate	6% per year
Design Life	10 years
VDF	2.5

6. What are the objectives of the AASHO Road Test ? Describe the PSI concept developed in the AASHO Test. How the pavement performance is predicted as per the test findings. **15**

Unit IV

7. (a) Determine the spacing beween contract joints for a slab 3.6 m wide and thickness 200 mm for the two cases-pain concrete with allowable tensile stress of 0.8 kg/ cm^2 and for reinforced cement concrete with 8 mm bars at 25 cm spacing. **10**

(b) What are the factors causing warping stresses in rigid pavement ? **5**

8. (a) What are the steps for the thickness design of rigid pavements as per IRC guidelines ? **6**

(b) Write short notes on the following :

(i) CRCP

(ii) SFRC

(iii) ICBP. **9**

AA-721

M. Tech. EXAMINATION, May 2018

(First Semester)

(B. Scheme) (Re-appear Only)

CE(HSE)

CEH501

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. Use of IRC 37 and IRC 58 IS allowed.

Unit I

1. (a) 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**

(b) Explain ESWL. Briefly explain the graphical method determination of ESWL. **8**

2. (a) Explain Camber. What are the objects of camber ? Discuss the factors on which the amount of camber to be provided depends. Specify the recommended ranges of camber for different types of pavement surfaces. **7**

(b) Write short notes on the following :

(i) Right of way

(ii) Width of pavement

(iii) Facilities of pedestrains

(iv) Friction. **8**

Unit II

3. (a) Derive an expression for SSD at level and at gradient. **8**

(b) Explain PIEV theory and its importance. **7**

4. (a) Discuss the effect of superior materials in total thickness of Flexible of pavement. **7**

(b) Write brief notes on any *two* :

(i) Modulus of subgrade reaction

(ii) Radius of relative stiffness

(iii) Equivalent radius of resisting section. **8**

Unit III

5. Design a new flexible pavement for a two lane undivided carriageway using the following data : **15**

Design CBR value of subgrade 5.0%

Initial Traffic on completion 300 cvpd