

Roll No .....

**CE-8042**

**B.E. VIII Semester**

Examination, December 2016

**Pavement Design**

**(Elective - II)**

**Time : Three Hours**

**Maximum Marks : 70**

- Note:** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.  
ii) All parts of each question are to be attempted at one place.  
iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.  
iv) Except numericals, Derivation, Design and Drawing etc.

1. a) Discuss the influence of temperature effects on rigid pavement.  
b) Discuss the relationship between contact pressure and tyre pressure.  
c) Discuss the factors which are considered in design of pavement.  
d) Discuss the meaning of equivalent single axle load. As per IRC code, what is the difference between legal and standard axle load.

OR

Find ESWL at depths of 5 cm, 20 cm and 40 cm for a dual wheel carrying 2044 kg each. The centre to centre tyre spacing is 20 cm and distance between the walls of the two tyres is 10 cm.

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- a) List the different types of pavements. Discuss for "Composite pavement".
- b) Draw the cross section of flexible pavement.
- c) Discuss the meaning of terms used in flexible pavement
  - i) GSB
  - ii) WMM
  - iii) DBM
- d) Describe the stress distribution in flexible pavement using Boussinesq's theory.

OR

Describe CBR method for the design of flexible pavement thickness.

- a) Discuss the factors which affect the design of rigid pavement.
- b) List the different types of rigid pavement are generally constructed.
- c) Which type of concrete grade is generally used for the construction of rigid pavement and list the various properties of concrete?
- d) How to estimate modulus of subgrade reaction by plate bearing test?

OR

Describe the Westergaard stress distribution theory for the design of rigid pavement.

- a) List the assumptions which are used in IRC method for the design of rigid pavement.
- b) What are the reasons of failure of rigid pavement due to fatigue?

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- c) Discuss PCA chart method for the design of rigid pavement.
- d) List various types of joints which are used in rigid pavement. Discuss the factors on which the spacing between the joints is decided.

OR

Discuss the design criteria for the dowel bars in rigid pavement.

5. a) What will be the pavement evaluation check list for existing flexible pavement?
- b) List the precautions required for flexible overlay over rigid pavement.
- c) Discuss the common distress causes of flexible pavement.
- d) Discuss the procedure to measure the deflection of flexible pavement using rolling wheel method.

OR

Discuss the procedure to measure the deflection of flexible pavement using falling weight loading method.

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