

[illegible]

3. Write down the design steps for slab thickness of cement pavement, recommended by IRC: 58-2011.
4. Explain briefly the fatigue behaviour of the concrete & how it is utilized in the PCA design method.
5. Write down the various factors affecting the pavement design. Explain it.
6. Explain the Marshall method of bituminous mix design.

SECTION-C

7.
 - a. Give a sketch showing the various layers in pavements, generally adopted in India.
 - b. What are the functions of each of the above layers?
8.
 - a. Explain the Boussinesq's theory and how it can be used for the design of highway pavements.
 - b. Write down its limitations.

9. Check the adequacy of dowel bar system for a concrete pavement using the following data.

Slab thickness = 33 cm

Joint width = 2 cm

Radius of relative stiffness = 103.53 cm

Design wheel load = 8000 Kg

Percentage of load transfer = 40

Grade of concrete to be used = M40

Diameter of dowel bar = 32 mm

Spacing of dowel = 32 cm

Modulus of dowel/concrete interaction = 41500 kg/cm²/cm

E for steel = 2×10^6 Kg/cm²

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.