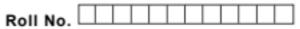


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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (CE) (2012 to 2017) (Sem.-7) PAVEMENT DESIGN Subject Code : BTCE-818

M.Code : 71877

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

Answer briefly :

- 1. Define Superpave.
- 2. What are the disadvantages of CBR method?
- 3. How is pavement thickness calculated by Triaxial test method?
- 4. Explain Inter Locking Concrete Block Pavement.
- 5. Explain modulus of subgrade reaction.
- 6. What are the critical stress combinations in concrete pavements during summer and winter?
- 7. What are the functions of base courses in flexible and rigid pavements?
- 8. Describe various critical load positions in slab.
- 9. What are the steps involved in overlay design for flexible pavements?
- 10. What do you mean by perpetual pavement?

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SECTION-B

- 11. Discuss Westergaard's concept of temperature stresses in concrete pavements.
- 12. In CBR method of design, sometimes the origin of the penetration curve is shifted. Explain, why?
- 13. Calculate the stresses at interior, edge and corner of a cement concrete pavement by Westergaard's stress equation. Given, Modulus of elasticity of concrete = 3 × 105 kg/cm2, Poisson's ratio of concrete = 0.15, thickness of concrete pavement = 18cm, Modulus of subgrade reaction = 8.5kg/cm2, Wheel load = 5100kg, Radius of loaded area = 15cm.
- Explain bituminous pavement with cemented base.
- 15. What are the various wheel load factors to be considered in pavement design? Explain each in detail.

SECTION-C

- Explain briefly the Marshall method of Rituminous Mix design.
- Describe step by step procedure for designing a Rigid Pavement with IRC method.
- 18. a) Explain the design considerations for spacing of (a) Expansion joints (b) contraction joints with and without reinforcement.
 - on join (b) RCC sl. alue in concrete a b) Find the spacing between contraction joints for a 3.5m slab width having a thickness of 22cm for (a) Plain concrete slab (b) RCC slab.

The allowable tensile stress value in concrete and steel are 0.8 and 1400 kg/m², coeff of friction is 1.5.

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.

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