D 90236 (Pages 2) Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE EXAMINATION, NOVEMBER 2015

CE 09 705 L10—HIGHWAY PAVEMENT DESIGN

Time : Three Hours Maximum : 70 Marks

Part A

1. What is depth of frost penetration ?
2. What is wheel load stress ?
3. What is the use of CBR value ?
4. What is the necessity of expansion joint ?
5. What is pavement overlay ?

(5 × 2 = 10 marks)

Part B

6. Where we have to widen the pavements ? Why ?
7. Distinguish flakiness index and elongation index.
8. What are the general causes of pavement failures ?
9. How are overlay designed ?
10. Describe alternate bay method of construction of concrete road.
11. Mention the failures of wearing causes in flexural pavement.

(4 × 5 = 20 marks)

Part C

12. What are the various methods of assessing subgrade soil strength ? Explain.

Or

13. Explain the Design of bituminous mixes by Marshall's method.
14. How to evaluate wheel load stresses for design of cement concrete pavement ?

Or

15. (a) What are group index in flexible pavement ?

    (b) What are the importance of CBR value ?

16. (a) How to fix spacing of expansion joints in cement pavement ?

    (b) Determine the spacing between contraction joint for 3.5 m slab width having thickness of 20 cm and $f = 1.5$ for the following *two* cases.

Or

17. Discuss the importance of gross wheel load and contact pressure in stress distribution pattern and in pavement design.

18. What are the various types of failures in flexible pavement ? Explain the causes.

Or

19. Explain the principle and uses of Benkelman Beam test.

(4 × 10 = 40 marks)