Reg. No. :

H 0633

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2011

FOURTH SEMESTER

CIVIL ENGINEERING

CE255 HIGHWAY ENGINEERING

(REGULATION 2008)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the significant recommendations of Jayakar committee report?
2. What are the objectives of the engineering surveys?
3. What is super elevation?
4. Where the vertical curves are provided?
5. Define pavement.
6. List out various types of joints in rigid pavements.
7. Differentiate between cut-back bitumen and bitumen emulsions.
8. What is the purpose of applying tack coat in bituminuous road construction?
9. What are called pot holes? How they are formed?
10. List the types of cracks formed in the cement concrete roads.

PART B — (5 × 16 = 80 marks)

11. Write short note on :
    (a) IRC
    (b) CRRI
    (c) NHAI
    (d) MORTH. (16)

Or

12. (a) How rural roads are classified? Explain. (12)
    (b) State the elements of road margin. (4)

13. Calculate the stopping sight distance required to avoid head on collision of two cars approaching from opposite directions at a speed of 75 kmph and 85 kmph. Assume that the reaction time of drivers is 2.5 sec and the co-efficient of friction between road surface and tyres are 0.4. (16)

Or

14. Describe the various types of horizontal curves. (16)

15. Explain briefly
    (a) Radius of relative stiffness
    (b) Interior loading
    (c) Edge loading
    (d) Equivalent radius of resisting stiffness. (16)

Or

16. Explain in detail the recommended design procedure for design of rigid pavements by IRC. (16)

17. Describe the penetration test, viscosity test, specific gravity test and softening point test for bitumen. (16)

Or

18. (a) Discuss the IRC recommendations for highway drainage. (8)
    (b) Write the construction procedure of bituminous road? (8)

19. Describe the typical failures in rigid pavements. (16)

Or

20. Explain the various methods of pavement evaluation. (16)

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