Code No.: 3180

FACULTY OF ENGINEERING

B.E. IV/IV Year (Civil) II Semester (Main) Examination, May/June, 2011

ADVANCED TRANSPORTATION ENGINEERING

(Elective – III)

Time : 3 *Hours*] [*Max. Marks* : 75

Answer **all** *questions from Part A.*
Answer any **five** *questions from Part B.*

Part A – (Marks : 25)

1. What is Fuller's Curve? State its application in soil stabilization? 3
2. State the factors influencing the properties of soil - cement mix? 3
3. Write a short note on frictional stresses in concrete pavements. 3
4. Write the significance of ESWL for design of pavement? 2
5. What are the causes of moisture variation in subgrade? 3
6. State the purpose of structural evaluation of pavements? 2
7. Write the causes of road accidents? 2
8. State the scope of traffic management system in regulating traffic flow in urban area? 3
9. Define (a) Parking load and (b) space hour. 2
10. Write the factors affecting road user costs? 2

Part B – (Marks : 50)

11. Discuss the scope of soft aggregates in soil stabilization. Explain Mehra's method of soil - stabilization? 10

12. (a) Explain the stresses in cement concrete pavement due to cyclic changes in temperature, using sketches? 6
    (b) What is the significance and objectives of sub-base course in rigid pavement? 4

13. Determine the thickness of bituminous overlay required, if Benkeliman Beam deflection studies were carried out on 13 selected sections measured as, 1.40, 1.32, 1.25, 1.23, 1.45, 1.47, 1.33, 1.22, 1.50, 1.15, 1.02, 1.54 and 1.06 mm. The pavement mean temperature was measured as 32°C. The present traffic volume = 750 CVPD. take, subgrade moisture correction factor = 1.2. Assume, annual growth of traffic as 7.5%. 10

[P.T.O.

14. (a) Explain benefit-cost analysis and its significance? 5
    (b) Explain the level of service concept while deciding the design capacity of a road? 5

15. (a) Write the principles of Tidal flow operation that can be translated into practice? 5
    (b) What are the various types of parking facilities designed for traffic needs? 5

16. (a) Compare the GI method and IRC revised CBR methods of Pavement design? 5
    (b) What are the special problems in drainage of surface water in hill roads? 5

17. Write short note on any **three** of the following. 10
    (a) Skid Resistance of pavements.
    (b) Restrictions on turning movements of vehicles.
    (c) Exclusive Bus lanes.
    (d) Preliminary investigations for soil-stabilization.
