

[01 – 4106]

IV/IV B.E. DEGREE EXAMINATION.

First Semester

Civil Engineering

TRANSPORTATION ENGINEERING – I

(Common with Civil and Civil Environmental Engineering and Dual Degree programme in Civil Engineering)

(Effective from the admitted batch of 2006 – 2007)

Time : Three hours

Maximum : 70 marks

Question No. 1 is compulsory.

Answer any FOUR from the remaining.

All questions carry equal marks.

(7 × 2 = 14)

1. (a) What are the design factors for any type of pavement?
- (b) Highlight the salient features of Telford Construction techniques.
- (c) What are road markings?
- (d) Define highway alignment.

- (e) What is 'Radius of Relative Stiffness' of a cement concrete pavement?
 - (f) What is Arboriculture?
 - (g) Give the equation for frictional stress developed in rigid pavement.
- 2.
- (a) Distinguish between Macadam construction and Telford construction techniques.
 - (b) Describe the various cross sectional element of a pavement with sketches.
- 3.
- (a) Derive the equation for over - taking sight distance with a neat sketch.
 - (b) What are traffic characteristics? Explain the road user and vehicular characteristics in detail.
- 4.
- (a) What is origin and destination studies? Why is it required to be conducted?
 - (b) Explain the procedure to conduct speed and delay studies in the field.
- 5.
- (a) Explain the tests to be conducted on a sample of aggregate to be used for road construction.
 - (b) Describe the different types of temperature stresses developed in cement concrete pavements.

6. Explain the construction procedure of Bituminous concrete roads with specification of materials. (14)
7. (a) Draw a neat sketch of an aircraft showing its component parts and explain their functions.
(b) What is Air traffic control? Explain its components.
8. Write short notes on the following:
- (a) Street lighting
 - (b) Sub - surface drainage system
 - (c) Vertical curves in alignment
 - (d) Wind rose diagrams and their types