[5254]-22
B.E. (Civil)
ADVANCED TRANSPORTATION ENGINEERING
(2008 Pattern)

Time : 3 Hours]　　　　　　　　　　　　　　　　　*[Max. Marks : 100*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4, and Q.5 or Q.6 from Section-I Q.7 or Q.8, Q.9 or Q.10 and Q.11 or Q.12 from section-II*
2) *Answer to the two sections should be written in separate books.*
3) *Figures to the right indicate full marks*
4) *Use of logarithmic tables, slide rule, Mollies charts, electronics pocket calculator and steam tables is allowed.*
5) *Assume suitable data if necessary.*
6) *Neat diagrams must be drawn wherever necessary.*

SECTION - I

Q1) a) Discuss in brief the stages in transport planning process. **[12]**

　　　b) Explain in brief the factors affecting Trip Generation and Attraction rates. **[6]**

OR

Q2) Explain in detail following projects : **[18]**

　　　a) Eastern Freeway link.

　　　b) NHDP various phases.

　　　c) Mumbai Mono-rail project.

Q3) a) Discuss in brief the importance of grade separated interchanges in traffic control. **[6]**

　　　b) Explain in brief the merits and demerits of intelligent transportation systems. **[10]**

OR

Q4) a) Write a short note on Mass Rapid Transit systems. **[6]**

　　　b) Explain in brief the following : **[10]**

　　　(i) Flyovers (ii) Underpass (iii) Overpass (iv) Meeting at Grade (v) Roundabout

Q5) a) What do you mean by economic evaluation of transportation plan? Also state the objectives of carrying out economic evaluation. **[10]**

b) Write a short note on benefit cost method. **[6]**

OR

Q6) a) Explain the merits and demerits of BOT projects. **[10]**

b) Write a short note on Internal Rate of return Method. **[6]**

SECTION - II

Q7) a) Explain in brief the Fundamental diagram of traffic flow. **[8]**

b) Explain in brief the following terms : **[10]**

(i) Parking Accumulation (ii) Parking Volume (iv) Parking Load (iv) Parking Index.

OR

Q8) a) Explain in brief the factors affecting capacity and level of service. **[2+2+4]**

b) Explain in brief the Cordon Line survey and Screen Line survey. **[5+5=10]**

Q9) a) A Two lane two way road is at present carrying a traffic of 1000 Commercial Vehicles Per Day(CVPD) It is to be strengthened for growing traffic needs. The VDF has been found to be 3.0. The rate of growth of traffic is 10 % per annum. The period of construction is 5.0 years. The pavement is to be designed for 15 years after construction. Calculate the cumulative standard axles to be used in design. **[10]**

b) State comparison between highway pavement and airfield pavement. **[6]**

OR

Q10) a) Discuss the various types of failures in flexible pavement. **[10]**

b) Define Unevenness Index. Explain in brief the working of Bump Integrator. **[6]**

*Q11)*a) Why joints are necessary in Rigid Pavements? Discuss in brief various types of joints in Rigid pavements. **[10]**

b) Write a short note on warping stresses and frictional stresses. **[6]**

OR

*Q12)*a) What is overlay? Why it is provided? Discuss in brief methodology of design. **[10]**

b) Discuss in brief assumptions made by Mr H M Westergaards while doing analysis of Cement concrete Pavements. **[6]**

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