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Seventh Semester B.E. Degree Examination, Det-.
Urban Transportation and Planning

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. Define "System Approach". Explain with flow diagram system approach to transport planning.   **(08 Marks)**
    b. List merits and demerits of mass transit system.   **(08 Marks)**

OR

2   a. What is mass transit system? Explain "Para — transit" transport and "Mass and Rapid transit system.   **(08 Marks)**
    b. Write a note on BRTS and metro rails.   **(08 Marks)**

Module 2

3   a. What are the various surveys to be carried out in transportation planning process? Explain.   **(08 Marks)**
    b. List and briefly explain the types of inventory of transport facilities.   **(08 Marks)**

OR

4   a. Write a note on "Study area" and "Zoning". List the factors affecting on zoning.   **(08 Marks)**
    b. Define External cordon line. Explain the various factors considered in selection of external cordon line.   **(08 Marks)**

Module 3

5   a. What is Category analysis? What are the advantages and disadvantages of category analysis?   **(08 Marks)**
    b. The following information was obtained from a transportation survey of a town. Develop a linear regression (of type y = a + bx) model for estimating the trips generated from a zone. If the population in a particular zone increases to 40,000 predict the expected trip generation from that zone.   **(08 Marks)**

Zone No	1	2	3	4	5	6	7	8
Population in the zone (throusands)	26	28	31	33	22	30	20	25
Total trips generated (in hundreds)	12	11	17	15	12	15	9	**13**

OR

6   a. What is Trip distribution? Briefly explain average factor method and mention the disadvantages of the method.   **(08 Marks)**
    b. Obtain the future trip table by uniform growth factor method [Table : Q6(b)].   **(05 Marks)**

Table Q6(b)

O ------_4	1	2	3	
1	60	100	200	360
2	100	20	300	1260
3	200	300	20	3120

c. Trip originating from zone 1,2, 3 of study area are 78, 92 and 82 respectively. If the growth factor is 1.3 and cost matrix is shown in table Q6(c). Find the expanded origin constrained growth trip table.

Table Q6(c)

	1	2	3	O.
1	20	30	28	78
2	36	32	34	92
3	22	34	26	82
O	88	96	78	252

(03 Marks)

Module 4

7 a. What are opportunity model? Explain types of opportunity model. **(06 Marks)**

b. Define Modal split. Explain in brief the factors affecting modal split. **(10 Marks)**

OR

8 A self contained town consists of 4 residential areas A, B, C, D and 2 industrial states X and Y. Generation equations show that for the design year in question , the trips from home to work generated by each residential area per 24 hour day are as follows :

A	B	C	D
1000	2250	1750	3200

There are 3,700 jobs in industrial estate X and 4,500 in industrial estate Y. It is known that the attraction between zones is inversely proportional to the square of the journey time between zones. The journey times in minutes from home to work are :

Zones	A	B	C	D
X	15	15	10	15
Y	20	10	10	20

Calculate and tabulate the inter zonal trips for journeys from home to work. **(16 Marks)**

Module 5

9 a. What are the applications of traffic assignment? **(08 Marks)**

b. Write a note on :

i) All or nothing assignment   ii) Capacity Restraint assignment. **(08 Marks)**

OR

10 a. Explain land use planning models. **(10 Marks)**

b. Write a note on user equilibrium assignment. **(06 Marks)**