

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E –IIst SEMESTER–EXAMINATION – JULY- 2012****Subject code: 1721902****Date: 09/07/2012****Subject Name: Transportation Planning****Time: 10:30 am – 13:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** What are the criteria for dividing study area in to zones for transportation planning? What is trip? Explain significant factors in trip generation. **07**
- (b)** Before specific decision can be made relating to layout and design of Transport facilities what are the questions (Issues) to be addressed by Transportation professionals? **07**
- Q.2 (a)** The present trip matrix, growth factor and future trip generation are given. Find trip distribution Using average growth factor method carry out 3 iterations. **07**

Items	Zone			
	1	2	3	4
Future trips	300	1000	800	300
Growth factor	3	4	2	1

Present trip matrix:

i \ j	1	2	3	4
1	--	25	50	25
2	25	--	150	75
3	50	150	--	200
4	25	75	200	--

- (b)** Explain 3-Levels of planning: Strategic Planning, Tactical Planning and Project Planning. **07**

OR

- (b)** Explain Land use Transportation cycle with flow chart. **07**

- Q.3 (a)** Write note any two:: **07**

- a. Generated traffic,
- b. Derive equation for generated traffic
- c. Explain generated traffic with gravity model

- (b)** A and B are residential zones. C ,D ,E are employment zones. The employment in zone C,E, D are 10,000 , 12,000, 15,000. The population density of zones are as **07**

Zones	Population density / Km ²
A	25000
B	30000
C	10000
D	12000
E	15000

The travel time matrix among zones is given below. Travel time in minutes.

Origin\ Destination	C	D	E
A	5	10	15
B	6	10	14

Function $f(d_{ij}) = d_{ij}^{-b}$, $b = 1.00$. Find accessibility AA , AB , RAA , RAB .**OR**

- Q.3 (a)** Explain Transportation system management (TSM) planning process with a flow chart. **07**

- (b) Write note: Critical Appraisal of Category Analysis Technique. 07
 Explain importance of following tests in regression modeling:
 (I) R – test (II) F –test (III) T – test

- Q.4 (a) Describe stages in model formulations. 07
 (b) Explain the matrix showing mutually – supportive (Compatibility) TSM technique arranged to suggest programme packages for solving urban transportation problems. 07

OR

- Q.4 (a) The number of trips produced in and attracted to the zones 1, 2, 3 are tabulated below, with L factors. 07

Zones	1	2	3	Total
O _i	14	33	28	75
D _j	33	28	14	75
L _i	0.04	0.02	0.04	

The order of closeness of zones is given in matrix

i / j	1	2	3
1	1	2	3
2	1	1	3
3	2	1	2

Distribute trips among zones

- Q.4 (b) Write note: Intervening Opportunity Model. 07

- Q.5 (a) Explain in detail, “Capacity Restraint Method” OR “Multipath Assignment” for traffic assignment. 07

- (b) Explain competing opportunity model. Compute inter zonal trip interchanges due to productions at zone 1, with 250 attractions at zone 2, 100 attractions at zone 3 and 600 attraction at zone 4. Assume travel time in minute as under. 07

From	To	Travel time
1	1	0
1	2	5
1	3	10
1	4	15

OR

- Q.5 (a) Explain Garin model. How this model different from Lowry models? 07

- (b) Write note (i) Pivot point Analysis. 07
 (ii) Incremental Logit model.
