

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024****Subject Code: 3160608****Date:30-05-2024****Subject Name: Urban Transportation Planning****Time: 10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
<b>Q.1</b>	(a) State the goals and objectives of transportation planning.	<b>03</b>
	(b) State the causes and impacts of urbanization.	<b>04</b>
	(c) Explain the functions of transportation in detail	<b>07</b>

<b>Q.2</b>	(a) Define: (1) Desire line (2) CBD (3) Centroid	<b>03</b>
	(b) Classify mass transit system in brief.	<b>04</b>
	(c) Discuss the stages involved in transportation planning	<b>07</b>

**OR**

(c)	Briefly discuss about various factors affecting trip production and trip attraction. What are the merits and limitations of 'Category Analysis'.	<b>07</b>
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<b>Q.3</b>	(a) Write a short note on screen line check.	<b>03</b>
	(b) State the importance of zoning.	<b>04</b>
	(c) Define land use. Explain land use and transport interaction.	<b>07</b>

**OR**

<b>Q.3</b>	(a) Explain intermediate public transport in brief.	<b>03</b>
	(b) Explain the following terminology with the neat diagram (1) Parking accumulation (2) parking volume (3) parking load (4) parking turn over	<b>04</b>
	(c) The following data of trips per day was collected for a city area for various family income groups. Develop the linear regression model for the trips generated for this data. Also, find out the number of trips generated if income reaches to Rs. 81000/-	<b>07</b>

Income in (‘ooo)	30- 35	35- 40	40- 45	45- 50	50- 55	55- 60	60- 65	65- 70
Trips	5	6	7	9	12	15	19	23

<b>Q.4</b>	(a) Give detailed classification of “trip” based on various aspects.	<b>03</b>
	(b) Explain gravity model for trip distribution.	<b>04</b>

- (c) A study area has been divided in three zones 1, 2, 3. The present trip distribution matrix is given with future total trip productions and trip attractions. Develop the future trip distribution matrix using Detroit method. Do iteration process up to 1 stage. **07**

D O	1	2	3	Total Present Production	Total Future Production
1	220	250	180	650	950
2	240	200	160	600	800
3	210	160	280	650	950
Total present Attraction	670	610	620	1900	-
Total future Attraction	1000	750	950	-	2700

**OR**

- Q.4** (a) Explain the factors affecting modal split **03**  
 (b) Write a short note on “All or Nothing” method of traffic assignment. **04**  
 (c) Classify and explain various types of urban road pattern. **07**

- Q.5** (a) State the principles of route planning. **03**  
 (b) Compare Trip-end-type model with Trip-interchange-type model for modal split analysis **04**  
 (c) Compare BRTS and Metro rail by considering different aspects **07**

**OR**

- Q.5** (a) Differentiate between captive rider and choice rider. **03**  
 (b) Define route assignment. State the purposes of route assignment. **04**  
 (c) State the problems in urban goods movement. Explain factors affecting urban goods movement. **07**

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