SARVAJANIK UNIVERSITY

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S-2025 Date: 04-06-25 Time: 09:30 AM to 12:30 PM Regular / Backlog Exam

6

Master of Planning (Urban & Regional Planning) - SEMESTER- II EXAMINATION

Course Code: MUUP12203

Total Marks: 120

Course Name: Transport Planning

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- 4. Support your answer with neat and illustrated diagram wherever necessary.

Q.No		Marks
Q1.		20
(A)	State whether following statements are true or false:	05
1	Non-Home-based trips have neither end of the trip at home	
2	The quality of transportation facilities and the resulting level of accessibility affect	
	the trip generation.	
3	Urban roads in India have a homogenous traffic.	
4	In the context of urban transport, "networks" are defined as system of linked locations.	
5	Para transit refers to intermediate modes of transport.	
(B)	Define/Explain the Terms (ANY FIVE)	15
1	Urbanization	
2	Origin-Destination	
3	Sector theory	
4	Accessibility	
5	LOS	
6	CMP	
Q.2	Answer in detail: (ANY TWO)	20
1	Explain urban systems and their interrelationships.	
2	Discuss the need of land-use transport modelling.	
3	Discuss Lowry model and its significance in transportation planning.	
Q.3	Answer in detail: (ANY TWO)	20
1	Explain factors to be considered for Transportation Planning Process.	
2	Explain the four-stage model of urban transportation planning	
3	Explain Significance of Transportation with reference to Economic Development.	
	Support your answer with Example.	
Q.4	Write a Note: (ANY TWO)	30
1	Give classification of urban roads. Explain with example of any urban area.	
2	Enlist & Explain factors governing Road design	
3	Explain: PCU	
4	Discuss the Goals of transportation Planning.	
Q.5.	Write a Descriptive Answer	30

You are assigned to forecast the traffic volume for a design horizon of 20 years using the Compound Annual Growth Rate (CAGR) method and to estimate the required lane capacity.

Given Data:

A mid-sized urban municipality has conducted a classified traffic volume count on a major arterial road. The recorded **Average Daily Traffic (ADT)** in the base year **2025** is as follows:

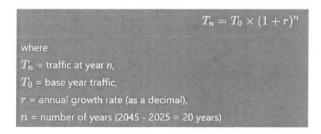
Vehicle Type	Daily Volume (Vehicles/day)	
Cars	12,000	
Two-Wheelers	25,000	
Auto Rickshaws	5,500	
Buses	1,800	
Light Commercial Vehicles (LCVs)	4,000	
Trucks	2,200	

PCU factors (as per IRC standards) are given below:

Vehicle Type	PCU Factor
Cars	1.0
Two-Wheelers	0.5
Auto Rickshaws	1.2
Buses	3.0
LCVs	1.5
Trucks	3.0

The town is projected to grow at an average annual growth rate of 5.5%.

- 1. Calculate the total traffic in PCU/day for the base year (2025).
- 2. Forecast the traffic volume (in PCU/day) for the design year 2045 using the Compound Annual Growth Formula:



- 3. Estimate the Peak Hour Traffic assuming 10% of daily traffic occurs in the peak hour.
- 4. Determine the number of lanes required in one direction if the practical capacity of a single urban lane is 2000 PCU/hour.
- 5. Provide a brief justification regarding **road widening**, **land requirement**, and potential **infrastructure improvements** based on the forecast
- 2 Discuss Features of National Urban Transport Policy.