U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

July 2023 Semester End Main Examinations

Programme: B.E. **Semester: VIII**
Branch: Civil Engineering **Duration: 3 hrs.**
Course Code: 21CV8PEUTP **Max Marks: 100**
Course: Urban Transport Planning **Date: 08.07.2023**

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

				CO	*PO*	Marks
			UNIT - I			
1	a)		Discuss the functions and characteristics of urban transport planning.	-	-	**10**
	b)		Summarize the various stages involved in transportation planning process.	*CO1*	*PO1*	**10**
			UNIT - II			
2	a)		Discuss any five types of surveys carried out in urban transport planning.	*CO1*	*PO1*	**10**
	b)		Define external cordon line. Discus the factors to be given due weightage in the selection of external cordon line.	*CO1*	*PO1*	**10**
			UNIT - III			
3	a)		Elaborate the methods of trip generation and factors influencing trip production and attraction.	*CO2*	*PO1*	**10**
	b)		The table shows data for vehicle trips per day, as related to income, for one zone of the study area. Develop the trip generation equation.	*CO2*	*PO2*	**10**
			OR			
4	a)		The table shows data for trips per day, as related to persons in a household and vehicle ownership, for one zone of the study area. Develop the trip generation equation. $y=a+b_1x_1+b_2x_2$	*CO2*	*PO2*	**14**

Trips per day	No. of Cars
2	2
4	1
2	3
3	2
2	4
4	2

			Trips per day / **No. of Two wheelers** / **Persons in Household** 3 / 3 / 4 2 / 2 / 6 5 / 1 / 3 4 / 5 / 5 6 / 3 / 2 2 / 2 / 4			
	b)	Discuss about Aggregated and Disaggregated analysis.		*CO2*	*PO1*	**06**
		UNIT - IV				
5	a)	Explain in detail the furness method of trip distribution with an example.		*CO2*	*PO1*	**10**
	b)	A study area has been divided into four zones A, B, C and D. The results of the trip generation analysis and the present trip distribution matrix is included in the following table: **O \ D** / **A** / **B** / **C** / **D** / **Future Produced trips** **A** / 15 / 10 / 25 / 30 / 200 **B** / 25 / 25 / 20 / 25 / 190 **C** / 20 / 40 / 15 / 20 / 250 **D** / 30 / 35 / 20 / 10 / 245 **Future Attracted Trips** / 225 / 330 / 160 / 170 Develop the future distribution of trip matrix using: i. Uniform growth factor method ii. Average growth factor method		*CO2*	*PO2*	**10**
		OR				
6	a)	Discuss gravity model and its calibration.		*CO2*	*PO1*	**10**
	b)	Three zones A, B and C are given with interchanges between A and B=40, between B and C=30 and between C and A=45. These are non-directional interchanges. Growth factors of 2.4, 3.2 and 1.8 are forecasts for the zones A, B and C respectively. Using fratar method, compute the zonal interchanges in the forecast year (Two Iterations).		*CO2*	*PO2*	**10**
		UNIT - V				
7	a)	Discuss the applications of route assignment and the factors affecting route choice.		*CO3*	*PO1*	**10**
	b)	Define modal split? Discuss the factors affecting modal split.		*CO3*	*PO1*	**10**

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