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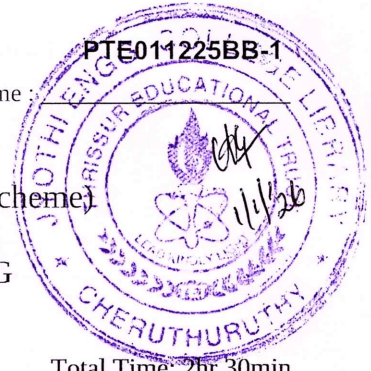
Name: _____



Jyothi Engineering College(Autonomous)

M.Tech Degree S1 (R) Examination, December 2025 (2025 Scheme)

25PTET102- URBAN TRANSPORTATION PLANNING



Total Mark: 60

Total Time: 2hr 30min

CO MARK

PART A

Answer All Questions

1. What are the key concepts of the systems approach to urban transportation planning, and how do they contribute to effective and sustainable urban mobility? CO1 (5)
2. How will you classify trips? Give any two examples. CO2 (5)
3. Discuss the advantages of gravity model of trip distribution over the growth factor methods. CO3 (5)
4. What is the logit model, and how does it differ from the probit model in predicting travel choices? CO4 (5)
5. How can land use planning and urban development strategies address transportation issues without expanding transport infrastructure? CO5 (5)

PART B

Answer Any Five Question(s)

6. Discuss the characteristics of trip maker and their effect on travel demand estimation. CO1 (7)
7. What are the important considerations in defining cordon lines and zoning systems in urban transportation surveys? CO2 (7)
8. How is the sample size determined for the conduct of the OD studies? What is the expansion factor and how is this calculated for home interview survey? CO3 (7)
9. Given the utility equation $U_k = a_k - 0.003X_1 - 0.04X_2$, where X_1 is the travel cost in rupees and X_2 is the travel time in minutes.
 - (i) Calculate the market shares of the following travel modes by logit model formulation.

Mode, k	a_k	X_1	X_2
Automobile	-0.20	120	30
Express Bus	-0.40	60	45
Regular Bus	-0.60	30	55

CO4 (7)

- (ii) Estimate the effect that a 50% increase in the cost of all three modes will have on mode split.

10. Estimate the future distribution by Furness method (one iteration) from the following trip table data.

O/D	1	2	3	4	Future Trips
1	-	50	60	30	280
2	40	-	70	20	390
3	20	60	-	40	300
4	50	70	30	-	220
Future trips	200	500	340	150	

CO5 (7)

11. Define traffic assignment. Explain any three methods of traffic assignment in detail.

CO4 (7)

12. Explain how the use of different transportation planning software aids a transport planner in various studies.

CO2 (7)
