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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Civil Engineering

Semester End Examination; Aug. / Sep. - 2020

Urban Transport Planning

Handwritten signature and date: 3/9/2020
Max. Marks: 100

Time: 3 hrs

Note: i) Answer **TWO** full questions, selecting **ONE** full question from **UNIT - I** and **UNIT - II**.

ii) Answer any **THREE** full questions, choosing from **UNIT - III, UNIT - IV** and **UNIT - V**.

UNIT - I

- 1 a. Briefly explain interdependence of land use and traffic. 10
- b. With a flowchart, explain system approach to transport planning. 10

OR

- 2 a. Explain with a flowchart, different stages in transport planning process. 10
- b. How forecast, analysis of future conditions and plan synthesis is done? Explain with a suitable model. 10

UNIT - II

- 3 a. List and explain various transportation surveys carried to collect O-D data. 10
- b. Explain different types of inventory of transport facilities. 10

OR

- 4 a. Describe different factors governing trip generation and attraction rates. 10
- b. What do you understand by category analysis? State its assumptions. 10

UNIT - III

- 5 a. Solve the given O-D matrix by Average factor method. 10

	<i>D</i>				
<i>O</i>					
		1	2	3	P_i
1		60	100	200	360
2		100	20	300	1260
3		200	300	20	3120
A_j		360	1260	3120	

Carryout one iteration.

- b. Solve the given matrix by Fratar method and determine new growth factors. Carryout one iteration. 10

	<i>D</i>				
<i>O</i>					
		A	B	C	D
A		-	10	12	18
B		10	-	14	14
C		12	14	-	6
D		18	14	6	-
Estimated future totals		80	114	48	38

- 6 a. A self-contained town consists of four residential areas A , B , C , and D and two industrial estates X and Y . Generation equations shows that for the design year in Question, the trips from home to work generated by each residential area per 24hr day are as follows.

A	1000
B	2250
C	1750
D	3200

There are 3,700 jobs in industrial estate X and 4,500 in industrial estate Y . It is known that the attraction between zones is inversely proportional to square of the journey times between zones. The journey time in minutes from home to work are;

Zones	X	Y
A	15	20
B	15	10
C	10	10
D	15	20

Calculate and tabulate the inter-zonal trips for journeys from home to work.

- b. Explain different phase in calibration of gravity model. 10

UNIT - IV

- 7 a. Explain the factors affecting modal split. 10
- b. Draw the flow diagram for the process of modal split in transportation process at different stages. 10
- 8 a. Explain different techniques in traffic assignment. 10
- b. List the purpose of traffic assignment and explain 'Moore's algorithm assignment technique. 10

UNIT - V

- 9 a. Explain different types of IPT vehicles in India. 10
- b. Write a note on computer application in transport planning. 10
- 10 a. Explain the role of metro rail in Urban transportation. 10
- b. Explain difficulties in planning for small and medium cities. 10

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Nandi Desai
3/9/2020
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