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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, April/May 2018

Programme: B Tech Civil Engineering　　　　　　　　　　Semester – VIII
Course Name: Urban Transport Planning　　　　　　　Max. Marks   : 100
Course Code: CEEG 432　　　　　　　　　　　　　　　Duration   : 3 Hrs
No. of page/s: 3

Set A

Instructions: 1. Assume the missing data suitably and clearly explain your assumptions
　　　　　　　2. All the questions are compulsory.

SECTION A (5x4=20 marks)

S. No.		Marks	CO
Q1	Explain the following terms. 　　　　i. Trip Purpose 　　　　ii. Modal split 　　　　iii. Zoning 　　　　iv. Inventory	5	CO1
Q2	Draw the flow diagram for modal split carried out between Trip Generation and Trip Distribution.	5	CO2
Q3	Discuss on traffic assignment application with respect to a metropolitan city.	5	CO3
Q4.	Discuss the recent advancements in MRTS.	5	CO4
	SECTION B (10x4=40 marks)		
Q5.	It has been found that there are 2500 households of 5 members in each in an urban area. Find the probability that a particular household of this size has 0, 1, 2, 3, 4 and 5 employed residents.	10	CO3
Q6.	What are the challenges associated with the MRTS? Discuss with the help of an example(s).	10	CO4
Q7.	The speed and concentration of vehicles in a traffic stream were observed as given below. Find the regression equation for determining speed from concentration.	10	CO1

Concentration(Veh./Km	15	25	35	45	55	65	75	85	95	100
Speed (Kmph)	70	65	74	54	25	95	66	99	32	34

Q8.	What is spurious correlation? Explain its significance with the help of an example.	10	CO1

SECTION-C (20x2=40 marks)

Q9	Using Fratar growth factor method; calculate and tabulate inter-zonal trips:	20	CO2

Zone	1	2	3	4	Growth factor
1		75	175	80	1.5
2	80		325	160	2.75
3	170	380		280	4.3
4	220	180	390		2.5

OR

Q9.	The trip interchanges among three zones of a study area are shown in the matrix below –	20	CO2

Zone	1	2	3	4	Growth factor
1		50	25	25	1.5
2	50		100	100	2.75
3	25	100			4.3
4	25	75	150	150	2.5

The growth factors estimated for different zones over the 20 year design period are as given below. Estimate the trip matrix for the design year.

Zone	1	2	3
G.F.	3	4	1

Q10.A	Explain the factors considered during the economic evaluation in transport planning.	**10**	**CO4**
B.	Explain the various methods in modal split.	**10**	**CO3**

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Set B

Instructions: 1. Assume the missing data suitably and clearly explain your assumptions
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S. No.	SECTION A (5x4=20 marks)	Marks	CO
Q1	Explain the following terms. i. Problem definition ii. Goals & Objectives iii. Constraints iv. Inventory	5	CO1
Q2	Explain the various techniques of traffic assignment.	5	CO2
Q3	What are the various factors affecting model split?	5	CO3
Q4.	Compare MRTS with the conventional public transport.	5	CO4
	SECTION B (10x4=40 marks)		
Q5.	In analyzing the employment structure of households in an urban area, it has been found that there are 1500 households of 4 members in each. Find the probability that a particular household of this size has 0, 1, 2, 3 and 4 employed residents.	10	CO3
Q6.	Explain the development of MRTS in your area. If not already developed, discuss the scope of its development.	10	CO4
Q7.	The speed and concentration of vehicles in a traffic stream were observed as given below. Find the regression equation for determining speed from concentration.	10	CO1

Concentration (Veh./Km	10	20	30	40	50	60	70	80	90	100
Speed (Kmph)	70	65	74	34	65	75	56	65	32	34

Q8.	Explain the number plate survey with the help of a sample survey form.	**10** **CO1**

SECTION-C (20x2= 40 marks)

Q9. Using average growth factor method calculate and tabulate inter-zonal trips:

O\D	1	2	3	4	TOTAL PRESENT TRIP	PREDICTED FUTURE TRIPS
1		87	125	50	262	300
2	88		450	187	725	1000
3	125	450		300	875	800
4	50	188	300		538	300

20 **CO2**

OR

Q9.	Calibrate the Gravity Model for 4-network problem:	**20** **CO2**
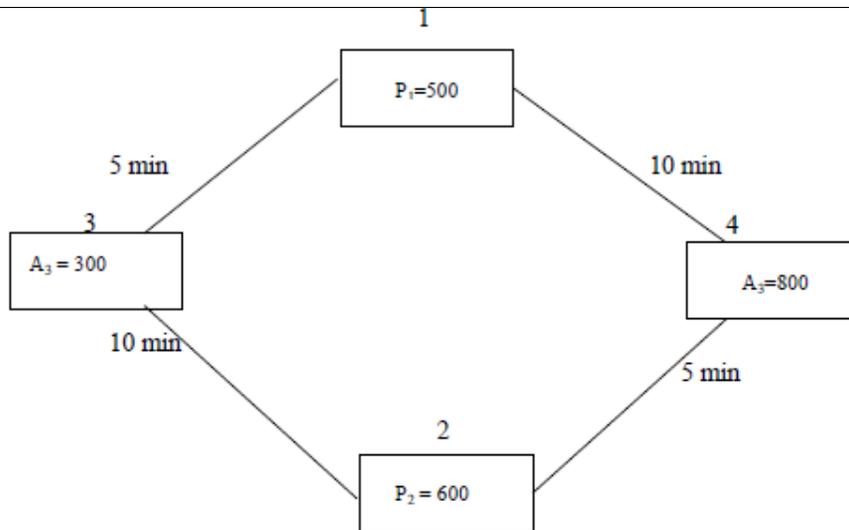
t_{13}	t_{13}	t_{13}	t_{13}
200	300	100	500
5	10	10	5

Q10.A	Explain the various types of diversion curves and its application.	10	CO3
B	Explain trip interchange modal split procedure with the help of a flow diagram.	10	CO4