P P SAVANI UNIVERSITY

Seven Semester of B. Tech. Examination
December 2022
SECV 4601 Urban Transportation Planning

01.12.2022, Thursday   Time: 10:00 a.m. To 12:30 p.m.   Maximum Marks: 60

Instructions:
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

			CO	BTL
Q - 1	MCQ/Short Question/Fill in the Blanks (Any Five)	[05]		
(i)	Define: Study area		CO3	1
(ii)	What is the full form of NUTP?		CO1	1
(iii)	Which one of the following is a feature of an urban area?		CO5	4

     a. A minimum population of 500   b. At least 75% of the male main working population engaged in agricultural pursuits
     c. A population density of at least 400 persons per sq. km.   d. None of the above

			CO	BTL
(iv)	Define: Mobility			
(v)	Means or phenomenon or process for moving from one place to another is known as _____.		CO1	6

     a. Transportation   b. Trip
     c. Transport   d. None of the above

			CO	BTL
(vi)	Urbanization leads to growth in _____.		CO1	1

     a. Population   b. Human activity
     c. Area of city   d. All of the above

			CO	BTL
(vii)	Write full form of PCU ?		CO2	1
Q - 2 (a)	What are the applications of O-D survey data? Enlist different methods of conducting O.D survey and explain any one in detail stating its advantages and disadvantages.	[05]	CO2	1
Q - 2 (b)	Explain factors affecting travel demand.	[05]	CO3	1

OR

			CO	BTL
Q - 2 (a)	What is trip generation? Explain in details the factors governing trip generation and attraction rates.	[05]	CO3	3
Q - 2 (b)	Enlist the different methods of trip distribution.	[05]	CO3	3
Q - 3 (a)	Enlist the types of transportation surveys and explain any one.	[05]	CO2	1
Q - 3 (b)	Enlist the methods of trip generation analysis.	[05]	CO3	3

OR

			CO	BTL
Q - 3 (a)	Which are the objectives and goal of transportation planning	[05]	CO2	4
Q - 3 (b)	Write a short note on Travel demand forecasting.	[05]	CO3	1

Q - 4   Attempt any one/two.   [05]

(i)   The following data shows average household size and total trips made per day for   CO3   5
a central zone of surat city. Develop the trip production equation and check its
validity.

Average Household size	Total trips made per day
2	4
3	6
4	7
5	8
6	10

(ii)   The distribution of present trips among the zones 1, 2 and 3 are given in O-D   CO3   5
matrix below. The future trips generated are also given in the matrix. Distribute
the future trips among the zones using AGM & UGM.

O \ D	1	2	3	Future Trips
1	60	100	200	360
2	100	20	300	1260
3	200	300	20	3120

SECTION – II

Q - 1   MCQ/Short Question/Fill in the Blanks (Any Five)   [05]
(i)   The zone in which a trip ends is called _____.   CO3   4
(ii)   Full form of CBD ?   CO2   2
(iii)   A trip having both origin and destination outside the study area is called _____   CO3   3
(iv)   Parking index = Number of bays occupied /_____ × 100   CO2   3
(v)   List out the classification of urban roads   CO5   1
(vi)   Full form of BRTS ?   CO5   4
(vii)   Define a trip?   CO3   1
Q - 2 (a)   What is model split? Discuss factors affecting model split?   [05]   CO4   1
Q - 2 (b)   Difference between trip end models and trip interchange models?   [05]   CO4   2

OR

Q - 2 (a)   Explain trip attraction.   [05]   CO3   1
Q - 2 (b)   What are the types of parking surveys? describe anyone?   [05]   CO2   1

Q - 3 (a)   Define urban structure and types of urban structures?   [05]   CO4   1
Q - 3 (b)   What is BRTS ? Explain advantages and disadvantages of BRTS ?   [05]   CO5   4

OR

Q - 3 (a)   Define corridor components and corridor identification   [05]   CO5   2

Q - 3 (b)   A study area has been divided into four zones 1,2,3,4 the present trip distribution   [05]   CO5   4
matrix is given. Total future trip produced and attracted is also given:

O/D	1	2	3	4	Total Present produced	Total future Trips
1	_	45	55	35	135	300
2	45	_	65	25	135	375
3	20	60	_	45	125	280
4	55	70	35	_	160	225
Total present attracted	120	175	155	105	555	_
Total future attracted trips	210	475	335	160	_	1180

Develop future trip distribution matrix using Uniform growth factor or Detroit method (Iteration process is not necessary).

Q - 4	Attempt any one/two.	[05]	
(i)	Explain screen line analysis?	CO4	1
(ii)	The distribution of present of trips among the zones A,B and C are given in O-D matrix below. The future trips generated (Ti) are also given in the last column. Distribute the future trips among the zones using average growth factor method.	CO3	4

O/D	A	B	C	Ti
A	60	100	200	360
B	100	20	300	1260
C	200	300	20	3120

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CO   : Course Outcome Number   BTL   : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create