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Reg. No. : .....

Name : .....



**Eighth Semester B.Tech. Degree Examination, December 2017  
(2008 Scheme)**

**08.807.5 Elective – V : TRANSPORTATION PLANNING (C)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** the questions.

- I. a) How are zones classified and coded ? Discuss.
- b) What is sampling and what are the different methods of sampling ?
- c) What are the components of a problem definition phase ?
- d) What are the disadvantages of multiple linear regression analysis technique ?
- e) Discuss the various growth factor models.
- f) What are the assumptions in demand estimation ?
- g) Explain the capacity restraint assignment technique.
- h) What are the effects of traffic noise ?

**(8×5=40 Marks)**

**PART – B**

Answer **one full** question from **each** Module.

**Module – I**

- II. a) Discuss with flow chart the systems approach to transportation planning. **10**
- b) Explain in detail the various surveys to determine the existing transportation facilities. **10**

**OR**

- III. a) What are the activities involved in different levels of planning ? Explain. **10**
- b) Explain in detail the methods to conduct origin destination surveys. **10**

**P.T.O.**



### Module – II

- IV. a) Discuss on the economic concepts and assumptions applicable to transport models. 8
- b) Estimate the future trip matrix by Furness method if the present trip matrix is as follows. 12

Origin	Destination				Future trip production
	A	B	C	D	
A	8	3	8	10	32
B	5	8	9	6	42
C	15	16	3	8	147
D	12	7	4	2	30
Future trip attraction	68	24	39	120	

OR

- V. a) What are the factors affecting trip generation ? List the methods for forecasting trip generation rates. 10
- b) The total number of trips produced in and attracted to the three zones X, Y and Z are as follows.

Zone	Trips Produced	Trips Attracted
X	4500	5100
Y	5100	6200
Z	6300	5500

It is known that the trips between two zones are inversely proportional to the second power of travel time between zones which is uniformly 40 minutes. Calculate the trip interchange between all zones. 10



**Module – III**

- VI. a) Discuss in detail the factors affecting modal split. 10
- b) Explain the detrimental effects of traffic on the environment. 10

OR

- VII. a) Discuss the various applications of ITS in improving the transportation system. 10
- b) Use the logit model to determine the probabilities of a group of 5000 work commuters choosing between three modes of travel during the morning peak hour. The utility functions for Car (C), Bus (B) and Light Rail (LR) are estimated by the following equations

$$U_C = 2.8 - 0.25 T_c - 0.13 T_t$$
$$U_B = 0.1 - 0.25 T_c - 0.13 T_t$$
$$U_{LR} = 0.5 - 0.25 T_c - 0.13 T_t$$

where  $T_c$  – Travel cost  
 $T_t$  – Travel time

Mode	$T_c$	$T_t$
Car	65	20
Bus	15	45
Light Rail	18	30

10

