Code: 13A01801 **R13**

B.Tech IV Year II Semester (R13) Regular & Supplementary Examinations April 2018

URBAN TRANSPORTATION PLANNING

(Civil Engineering)

Time: 3 hours Max. Marks: 70

PART – A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) What is the general classification of trips based on purpose?

(b) What are the various items to be considered for the selection of a model?

(c) There are about 1000 addresses are available in the original list. The no of samples selected are 20 from the original list for home interview surveys. There are about 4 samples are in eligible while there was no response from 2 addresses. Find out the expansion factor.

(d) Explain the difference between aggregate and disaggregate models with suitable examples.

(e) What are the basic assumptions made in regression analysis?

(f) Discuss about the influence of income on trip generation.

(g) Explain the use of diversion curves.

(h) What is trip end model?

(i) What are the objectives of project evaluation?

(j) What are the things to be considered in direct cost estimation of transportation projects?

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2 Explain the structure of Lowry land use model.

OR

3 Explain the concepts used in travel demand forecast.

UNIT – II

4 Discuss briefly about the factors considered in deciding the study area and traffic zones.

OR

5 Explain various stages involved in transportation planning process.

UNIT – III

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

A	1000
B	2200
C	1800
D	3000

Zone	Travel time in minutes	
	X	Y
A	15	20
B	15	10
C	10	10
D	15	20

There are 4000 jobs in industrial area X and 5000 in industrial estate Y. It is known that the attraction between zones is inversely proportional to the square of journey times. Calculate and tabulate inter zone trips for journeys from home to work using gravity model.

OR

7 What are the advantages and disadvantages of growth factor methods?

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UNIT – IV

8 What are the different applications of traffic assignment?

OR

9 Explain the model split with help flow diagram at trip generation stage.

UNIT – V

10 Explain the concept of Net Present Value.

OR

11 A new bypass is to be constructed at a busy city. The length of bypass will be 7.5 km and the length of the existing road is 8 km. The cost of the project is likely to be Rs.10,000,000. The speed of the traffic through the town is 48 kmph. And the present traffic is 800 vph. The predicted traffic after completion of project is 8500 vehicles/day out of which 55% will use bypass. It is computed if the bypass is not built, the traffic through the city will move at a speed of 42 kmph due to increased traffic. If the bypass is built the traffic on the bypass will be 80 kmph and that through the city will be 55 kmph. The travel costs for different speeds are 42 kmph, Rs.3.50/-, 55 kmph-Rs.3.40/- and 80 kmph-Rs.3.1/-. It is expected that the cost of construction of the bypass will bring down the accident rate from 1.8 per million vehicle km on the existing route to 0.5 per million vehicle km on the bypass. The cost of accident can be taken as Rs.50,000 and the maintenance cost per km is Rs.25,000/-. Compute the first year of return. Justify the project based on the minimum 50% return in first year.

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