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17CV751

Seventh Semester B.E. Degree Examination, Jan./Feb.2021
Urban Transportation and Planning

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Explain the system approach to transport planning using a flowchart.   **(10 Marks)**
   b. What is Urbanization? State the causes of Urbanization.   **(10 Marks)**

OR

2 a. What are the transportation problems? Explain briefly.   **(08 Marks)**
   b. Explain the classification of transit system with examples.   **(08 Marks)**
   c. Highlight the difference between Metro trains and BRTS.   **(04 Marks)**

Module-2

3 a. Define external Cordon line. What factors should be given due weightage in the selection of external Cordon line.   **(07 Marks)**
   b. What is zoning? Discuss the points to be kept in mind while doing zoning.   **(07 Marks)**
   c. Explain study area. List out the inventories of transport facilities, Explain any two. **(06 Marks)**

OR

4 a. Mention the different types of transport surveys that are to be carried out? Explain briefly.
                                                                                      (09 Marks)
   b. List out the use of secondary sources. Explain.   **(05 Marks)**
   c. What is Sampling? Discuss various types of Samplings.   **(06 Marks)**

Module-3

5 a. List the methods available for trip distribution for future. Explain any two methods.
                                                                                      (06 Marks)
   b. What is multiple linear regression analysis? Mention the assumptions made.   **(06 Marks)**
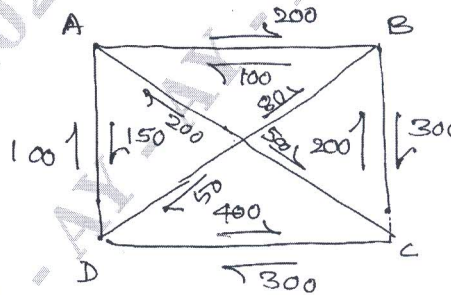   c. The following Fig. Q5 (c) shows trip distribution for the base year.

Fig. Q5 (c)

The origin and distination growth factor are as follows:

GF	Zone			
	A	B	C	D
Origin	3	2.5	2	1.6
Distination	1.2	1.5	3	2.4

Distribute the trips for the horizon year using furness method.   **(08 Marks)**

OR

6 a. Explain in detail the factors governing trip generation and attraction rates. **(08 Marks)**

b. Mention the assumptions made in category analysis. **(05 Marks)**

c. The following data shows average household size and total trips made per day for a particular zone of study area. Develop the trip distribution equation and also compute the coefficient of correlation.

Average house hold size	Total trips per day
2	4
3	6
4	7
5	8
6	10

(07 Marks)

Module-4

7 a. What are the factors affecting modal split? Explain briefly. **(08 Marks)**

b. Draw the flow diagram for modal split carried out between trip generation and trip distribution. **(06 Marks)**

c. Differentiate between "trip end" and trip "intercharge" of modal split. Specify variables used, explain any two variables. **(06 Marks)**

OR

8 a. Write a short note on opportunity models. **(06 Marks)**

b. Explain in detail the opportunity model relating to synthetic method. **(06 Marks)**

c. The total trips produced in and attracted to the three zones A, B and C of a survey area in the design year are tabulated as,

Zone	Trip produced	Trip attracted
A	2000	3500
B	3500	4800
C	4800	2000

It is known that the trip between two zones are inversely proportional to the second power of the travel time between zones, which is 25 minutes. If the trip interchange between zones B and C is 300. Calculate the trip interchange between zones A and B, A and C, B and A, C and B. **(08 Marks)**

Module-5

9 a. List the various assignment techniques and explain briefly. **(08 Marks)**

b. Explain the application of the traffic assignment. **(06 Marks)**

c. Briefly explain coding, route properties. **(06 Marks)**

OR

10 a. Discuss the points for the selection of Land use transport model. **(10 Marks)**

b. Write a flow chart of fundamental structure of Lowry model and explain principal components of the model. **(10 Marks)**

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