USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]                                    **10CV843**

# Eighth Semester B.E. Degree Examination, Dec.2018/Jan.2019
## Urban Transport Planning

Time: 3 hrs.                                                          Max. Marks:100

**Note:** *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

## PART – A

1   a.  Explain the scope of Urban Transport Planning.                          (05 Marks)
    b.  Discuss the interdependence of the land use and traffic.                (07 Marks)
    c.  With a help of flow chart, explain system approach to Urban planning.   (08 Marks)

2   a.  Explain the various stages involved in transport planning.              (10 Marks)
    b.  The following information was obtained from a transportation survey of a town, develop a
        linear regression model for estimating the trips from each zone. If the population in a
        particular zone increases to 60,000 predict the expected trip generation from that zone.
                                                                                (10 Marks)

| Zone | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------|----|----|----|----|----|----|----|----|
| X | 52 | 56 | 62 | 66 | 44 | 60 | 40 | 50 |
| Y | 24 | 22 | 34 | 30 | 24 | 30 | 18 | 26 |

3   a.  Define a 'Zone'. Mention the different factors considered in dividing the whole area into
        zones.                                                                  (10 Marks)
    b.  With a neat sketch, explain the road side interview survey method.      (10 Marks)

4   a.  Explain the factors governing the trip generation and attraction.       (10 Marks)
    b.  Explain the category analysis with the assumptions. Mention the advantages and
        disadvantages of this method.                                          (10 Marks)

## PART – B

5   a.  Obtain the future trip table by using : i) Uniform Rate method    ii)  Average growth
        factor method.                                                         (10 Marks)

| O\D | 1 | 2 | 3 |
|------|----|----|----|
| 1 | 50 | 40 | 60 |
| 2 | 40 | 20 | 30 |
| 3 | 60 | 30 | 20 |

The future trips generated in zone 1, 2, 3 are expected to be 300, 180, 320.

    b.  The number of trips produced in and attracted to the three zones 1, 2, and 3 are tabulated as
        follows :

| Zone | 1 | 2 | 3 |
|------|----|----|----|
| Trips produced (Pi) | 14 | 33 | 28 |
| Trips Attracted (Aj) | 33 | 28 | 14 |

As a result of calibration the friction factors to be associated with the impedance values
between the various zones have been found to be as follows :

| Impedance units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------|----|----|----|----|----|----|----|----|
| Friction factors | 82 | 52 | 50 | 41 | 39 | 26 | 20 | 13 |

The impedance values between the various zones can be taken from the following matrix.

| O＼D | 1 | 2 | 3 |
|---|---|---|---|
| 1 | 8 | 1 | 4 |
| 2 | 3 | 6 | 5 |
| 3 | 2 | 7 | 4 |

Distribute the trips between the various zones. (At least two iterations) **(10 Marks)**

**6** a. Explain the factors affecting the Model split. **(10 Marks)**
   b. With a help of flow diagram, explain the modal split carried out between trip generation and trip distribution. **(10 Marks)**

**7** a. Briefly explain the important considerations in selecting a land use transport models.
   **(10 Marks)**
   b. With a flow chart, explain the structure of Lowry model. **(10 Marks)**

**8** Write short notes on the following :
   a. Moore's algorithm. **(05 Marks)**
   b. Diversion curve. **(05 Marks)**
   c. Recent developments in model split analysis. **(05 Marks)**
   d. Difficulties in transport planning for small and medium cities. **(05 Marks)**

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