

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VI (New) EXAMINATION – WINTER 2019****Subject Code: 2160608****Date: 13/12/2019****Subject Name: Urban Transportation system****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

MARKS

- Q.1**
- | | | |
|-----|--|-----------|
| (a) | What is urbanization? Explain in brief. | 03 |
| (b) | Transportation and development – discuss the linkages. | 04 |
| (c) | Critically discuss the trend of urban population in country and worldwide and explain the challenges for a transportation planner thereafter. Use official data. | 07 |

- Q.2**
- | | | |
|-----|--|-----------|
| (a) | What is a mega city? Explain in brief. | 03 |
| (b) | What is modeling technique in transportation planning? What is model validation? | 04 |
| (c) | What is urban mass transit system? Why it is important for an urban area? | 07 |

OR

- | | | |
|-----|---|-----------|
| (c) | What is BRTS? How is it different from other transit systems? Critically discuss its merits and demerits. | 07 |
|-----|---|-----------|
- Q.3**
- | | | |
|-----|---|-----------|
| (a) | What is land use? Explain in brief. | 03 |
| (b) | Travel demand – explain in brief. | 04 |
| (c) | Critically discuss the linkages – land use and transportation system. Use neat figures. | 07 |

OR

- Q.3**
- | | | |
|-----|---|-----------|
| (a) | Explain zoning with neat diagram. | 03 |
| (b) | Explain cordon line checks with neat figure. | 04 |
| (c) | Develop the trip production equation with following data. Also calculate the relevant statistics and perform the validity checks. | 07 |

| | | | | | |
|-----------------------------|---|---|---|----|----|
| Average Household Size | 3 | 4 | 5 | 6 | 7 |
| Average Total Trips per Day | 5 | 7 | 8 | 10 | 10 |

- Q.4**
- | | | |
|-----|--|-----------|
| (a) | Explain goals and objectives in transportation planning. | 03 |
| (b) | What is accessibility in transportation? What is its significance? | 04 |

- (c) What are different surveys in transportation planning? Explain road side interview surveys in detail. **07**

OR

- Q.4** (a) Using the example (C) below, explain the limitations of average growth factor method in brief. **03**
 (b) What is multiple linear regression analysis? Explain in brief. **04**
 (c) An OD matrix is shown below. Give the graphical representation of the same and obtain the future trip distribution using average growth factor method. **07**

| D \ O | 1 | 2 | 3 | 4 | T _i |
|----------------|-----|------|-----|-----|----------------|
| 1 | 00 | 30 | 50 | 25 | 350 |
| 2 | 30 | 00 | 175 | 75 | 1200 |
| 3 | 50 | 175 | 00 | 200 | 850 |
| 4 | 25 | 75 | 200 | 00 | 300 |
| T _j | 350 | 1200 | 850 | 300 | |

- Q.5** (a) Briefly explain trip generation. **03**
 (b) Briefly explain trip distribution. **04**
 (c) What is model split? What are the factors affecting the same? Explain in detail. **07**

OR

- Q.5** (a) What is corridor? What is the significance of corridor identification in transportation planning? **03**
 (b) What is urban form? Explain liner urban form with neat diagram. **04**
 (c) Write Short note – Gravity Model. **07**
