

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E –Ist SEMESTER–EXAMINATION – JULY- 2012

Subject code: 711304N

Date: 13/07/2012

Subject Name: Basics of Transportation engineering

Time: 2:30 pm – 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.**

- Q.1** (a) Explain with neat sketches speed- volume –density relationships. **07**
(b) Which are the different modes of transportation? Explain in detail the characteristics of each mode. **07**

- Q.2** (a) Explain with diagram the different stages involved in the Transportation planning process. **07**
(b) What is Para-transit? How will you utilize this system for medium size cities? **07**

OR

- (b) What is co- ordination? Discuss the factors affecting the co- ordination. **07**

- Q.3** (a) Explain the mechanical methods of volume data collection. Also explain the use of volume data in planning various transportation facilities. **07**
(b) Explain (i) Speed (ii) Journey Speed (iii) Running Speed (iv) Time mean speed (v) space mean speed (vi) Average Speed (vii) Delay **07**

OR

- Q.3** (a) What is O-D survey? Which are the different techniques of O-D survey? Explain any one of them in detail. How will you represent the O-D data? **07**
(b) Which are the different elements to be designed in the highway geometry? Explain briefly their importance in the smooth operation of movement of vehicles **07**

- Q.4** (a) What is super elevation? Explain the factors affecting the super elevation. **07**
(b) What is PCU? Explain the various factors affecting PCU. **07**

OR

- Q.4** (a) What is intersection? Explain the advantages and disadvantages of at grade and grade separated intersection. **07**
(b) Explain briefly the terminal facilities to be planned at (Any two) **07**
I. Railway station
II. Airport
III. Bus station

- Q.5** (a) Explain the function of different layers in the pavement with neat sketch. Which are the factors affecting the thickness of pavement layer? **07**
- (b) Explain the different steps for the economic evaluation of transportation project. **07**

OR

- Q.5** (a) What is overlay? Which are the types of overlay? Describe the reasons which lead to overlay design. **07**
- (b) Describe briefly the techniques of on street and off street parking. Which method is more suitable in the busy street of CBD. **07**
