RTU Previous Year Question Papers BE CE 8th Sem Advance Transportation Engineering

UNIT-I

1 (a) What is "SPOT SPEED" ? What are the various methods of determing spot speeds ?

(b) Define O-D survey. What are the various methods for conducting O-D survey ? Why O-D survey is carried out ? How the O-D survey data is presented ?

OR

1 (a) Explain the various types of parking surveys.

- (b) Explain : (any four)
- (i) Parking accumulation
- (ii) Parking volume
- (iii) Parking load
- (iv) Parking duration
- (i) Parking index
- (vi) Parking turn over.

UNIT - II

The probability that a vehicle will turn right at an intersection is known to be 0.15. Assuming independence, calculate the probabilities of the following :

- (i) The tenth vehicle is not turning right.
- (ii) Exactly three out of ten vehicles will turn right.
- (iii)At least three out of ten vehicles wall turn right.
- (iv)Not more than three out of ten vehicles will turn right.

(i) The daily rents for 7 days taxi tour in a city are : 525, 640, 705, 570, 605, 640, 770.calculate

- -sample variance
- -sample standard deviation.

(ii) Eight participants in a bike race had following finishing times in minutes :

28, 22, 26, 33, 21, 23, 37, 24.find mean, median and mode for the finishing time.

OR

The spot speeds at a particular location are normally distributed with a mean of 51.7 kmph and a standard deviation of 8.3 kmph. What is the probability that

(i) the speed exceeds 70 kmph.

(ii) the speed lie between 40 kmph and 70 kmph. Follosing table shows the speed class and no. of vehicles. Find out relative and cummulative frequency and draw curves for both the cases.

No. of
vehicles
45
25
124
187
210
212
169
49

UNIT-III

3 (a) What do you mean by :

(i) Traffic volume.

(ii) Traffic density.

(ii) Traffic capacity.

Explain the relationship between traffic volume, density and speed.

(b) Explain Microscopic and Macroscopic traffic characteristics.

OR

3 (a) What are the advantages and disadvantages of traffic signals?

A fixed time 2-phase signal is to be provided at an intersection having a North-South and East-West road where only straight ahead traffic is permitted. The design hour flows from various arms and the saturation flows for these arms are given in the following table :

North South East West Design Hour Flow $\{q\}$ Pcu / hour $\}$ 1000 750 400 800 Saturation Flow (b) $\{Pcu / hour\}$ 3000 3000 2000 2400

(b)What are the various parameters to be considered in designing a Rotary Intersection.

UNIT - IV

4. (a) Enumerate the various traffic laws used in various countries,

(b) Derive the expression for safe speed at an intersection.

OR

4 (a) Explain various types of Road Markings with suitable diagrams.

Write short notes on : (any four)

(i) One way street.

(ii) Traffic island.

(iii) Street lighting.

(iv) At grade intersections.

(v) Warning signs.

UNIT-V

5. (a)What are the effects of noise pollution on ecological system?

(b) Roundabouts are safer than four-arm intersection", state reasons for this.

OR

What are the possible measures for improving pedestrians safety at intersections ?

Explain the following :

- (i) Visual intrusion and degrading the Aesthetics.
- (ii) Community impact due to road construction and maintenance.