

1:1b. Copy

CIVIL - VIII

8E4036	Roll No. : _____	Total Printed Pages : 4
	8E4036	
	B. Tech. (Sem. VIII) (Main/Back) Examination, April - 2011	
	Civil Engineering 8CE4.3 Advance Transportation Engg.	

Time : 3 Hours]

[Total Marks : 80

[Min. Passing Marks : 24

Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. _____ Graph Papers 2. Normal Distribution Function Table

UNIT - I

- 1 (a) What is "SPOT SPEED" ? What are the various methods of determining spot speeds ?
1+7=8
- (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 ?
1+4+2+1=8

OR

- 1 (a) Explain the various types of parking surveys.
8
- (b) Explain : (any four)
- (i) Parking accumulation
 - (ii) Parking volume
 - (iii) Parking load
 - (iv) Parking duration
 - (v) Parking index
 - (vi) Parking turn over.

2×4=8

8E4036]



1

[Contd...

UNIT - II

- 2 (a) 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) Atleast three out of ten vehicles will turn right.
 - (iv) Not more than three out of ten vehicles will turn right.
- 2×4=8
- (b) (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.
- 4
- (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.
- 4

OR

- 2 (a) 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.
- (b) Follosing table shows the speed class and no. of vehicles. Find out relative and cummulative frequency and draw curves for both the cases.

<i>Speed Class (kmph)</i>	<i>No. of vehicles</i>
0-10	45
10-20	25
20-30	124
30-40	187
40-50	210
50-60	212
60-70	169
70-80	49

8



UNIT – III

3 (a) What do you mean by :

- (i) Traffic volume.
- (ii) Traffic density.
- (iii) Traffic capacity.

Explain the relationship between traffic volume, density and speed.

3+5=8

(b) Explain Microscopic and Macroscopic traffic characteristics.

8

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 :

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

4+4=8

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

8

UNIT – IV

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

8

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

8

OR

8E4036]



3

[Contd...

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

8

- (b) Write short notes on : (any four)

- (i) One way street.
- (ii) Traffic island.
- (iii) Street lighting.
- (iv) At grade intersections.
- (v) Warning signs.

2×4=8

UNIT - V

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

8

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

8

OR

- 5 (a) What are the possible measures for improving pedestrians safety at intersections ?

8

- (b) Explain the following :

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

4×2=8

