

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 7
Subject Code: 03104431
Subject Name: Advanced Traffic Engineering

Date: 15 /05/2019
Time: 10:30am To 01:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (All are compulsory) (15)**A) Fill in the blanks. 5**

1. The unit of traffic density is _____
2. The maximum width of vehicle as per IRC specification is _____
3. The Full form of HCM _____
4. Equivalent factor of passenger car unit (PCU) for a passenger car as per IRC is _____
5. Formula for Rotary capacity is _____

B) One word & one line answer. 5

1. What is shape of Stop Sign Board? _____
2. What is the full form of LOS? _____
3. Which parking system is best for all users? _____
4. What is saturation flow in traffic engineering? _____
5. What is time headway? _____

C) Multiple Choice Questions. 5

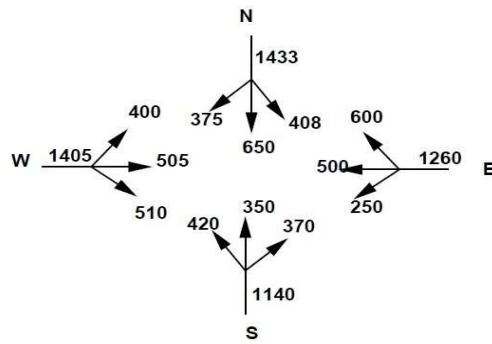
1. The most important objective of traffic engineering is
 (a) To manage pedestrians (b) To reduce the accidents (c) To manage the traffic
 (d) To provide a high speed road
2. What is the colour of parking sign board:
 (a) Red & White (b) Red & Blue (c) Green & Blue (d) None
3. What is the relation between density (K), volume (Q) & speed (V)?
 (a) $Q = K/V$ (b) $Q = KV$ (c) $K = V/Q$ (d) None
4. According to IRC minimum traffic volume is required to rotary design:
 (a) 300 (b) 500 (c) 800 (d) 1000
5. The number of parking spaces for a kerb of 59m and having the length of car as 5.0m is
 (a) 9 (b) 10 (c) 11 (d) 12

Q.2 Answer the following questions. (Attempt any three) (15)

- A)** Explain with graphs speed-flow-density relationship for the highway traffic.
- B)** List out various software of traffic engineering. Explain uses of VISSIM in solving problems of traffic engineering.
- C)** What is the significance of road marking? Explain various types of roads marking with uses.
- D)** Explain various factor affecting LOS & also explain various level of LOS with Diagram.

Q.3 A) What is On street & Off street parking? Explain types of On street parking system with sketches. (07)

- B) (1)** List out various element of rotary with diagram. (08)
- (2)** Width of approach for a rotary intersection is 12m. The entry and exit width of the rotary is 10m. Find capacity of the rotary of figure given below.



OR

B) What is intersection & grade separated intersection? Explain various types of grade separated intersection with diagram. (08)

Q.4 A) Explain various definition related to signal design: (i) Cycle time (ii) Lane Capacity (iii) Critical Lane (iv) Effective Green Time (v) Lost time (vi) Phase (vii) Interval (07)

OR

A) Explain the road user characteristics & vehicle characteristics affecting traffic stream. (07)

B) The consolidation data collected from speed and delay studies by floating method on stretch of urban road of length 3.5 km running north –south are given below determine the average values of (i) Volume (ii) Journey speed (iii) Running speed of the traffic stream along each direction. (08)

Trip No.	Journey on trip	Journey time (min-sec)	Stopped & Delay time (min-sec)	No. of vehicle overtaking	No. of vehicle overtaken	No. of vehicle from opposite direction
1	N-S	6-32	1-40	4	7	268
2	S-N	7-14	1-50	5	3	186
3	N-S	6-50	1-30	5	3	280
4	S-N	7-40	2-00	2	1	200
5	N-S	6-10	1-10	3	5	250
6	S-N	8-00	2-22	2	2	170
7	N-S	6-28	1-40	2	5	290
8	S-N	7-30	1-40	3	2	100