B.TECH/ CE/8TH SEM/CIVL 4242/2018
TRAFFIC ENGINEERING AND TRANSPORTATION PLANNING
(CIVL 4242)

Time Allotted : 3 hrs   **Full Marks : 70**

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one from each group.

Candidates are required to give answer in their own words as far as practicable.

Group – A
(Multiple Choice Type Questions)

1. Choose the correct alternative for the following: **10 × 1 = 10**

   (i)   Maximum number of passenger cars that can pass a given point on a road during one hour under the most ideal road way and traffic conditions, is known as
   (a) traffic density   (b) basic capacity of traffic lane
   (c) possible capacity of traffic lane (d) traffic volume.

   (ii)   Traffic forecasts is not influenced by
   (a)industrial output   (b)GDP   (c) population   (d)weather.

   (iii) The traffic survey is conducted at
   (a) sector level   (b) local level
   (c) regional level   (d) district level.

   (iv)   Volume of traffic which is due to improvement carried out in adjacent area, is known as
   (a) development traffic   (b) generated traffic growth
   (c) normal traffic growth   (d) current traffic.

   (v)   Customers prefer parking of their vehicle at
   (a) 90^0 to aisles   (b) 80^0 to aisles
   (c) 60^0 to aisles   (d) 75^0 to aisles.

   (vi)   Increase in traffic occurs when
   (a) price of vehicle increases   (b) price of vehicle decreases
   (c) price of fuel increases   (d) price of fuel decreases.

   (vii) The traffic population is estimated by
   (a) arithmetic method   (b) geometric method
   (c) harmonic method   (d) incremental increase method.

   (viii) The "3-Es" of traffic engineering stand for
   (a) enforcement, empowerment and eradication
   (b) engineering, education and expulsion
   (c) engineering, education and enforcement
   (d) engineering, education and enthusiasm.

   (ix)   Right hand curve sign is a
   (a) warning sign   (b) regulatory sign
   (c) informatory sign   (d) all of above.

   (x)   Width of weaving section of a rotary should be between
   (a) 6 m and 22m   (b) 7m and 21 m
   (c) 6m and 18 m   (d) 7m and 18 m.

Group – B

2. (a) Describe with suitable examples the different types of road user characteristics that are observed on Indian roads.

   (b) What are the different design factors that are taken into consideration while designing a rotary intersection?

                                                              6 + 6 = 12

3. (a) With the help of Speed-Flow and Density curves derive the relation between speed, flow and density of a road section.

   (b) Define headway, spacing and delay of vehicles

                                                              6 + 6 = 12

Group – C

4. (a) What are the advantages and disadvantages of parking?

   (b) Write short notes on warning sign, informatory sign and regulatory sign.
                                                              6 + 6 = 12

5. (a) Describe the four basic elements that are held responsible for traffic accidents on roads.

   (b) Write short notes on traffic capacity study and traffic management measures.

                                                              6 + 6 = 12

Group – D

6. (a) Explain various stages in transportation planning with the help of a flowchart.

(b) Describe the most common problems of urban traffic in India.

6 + 6 = 12

7.(a) Draw a flowchart indicating various stages in transport planning.

(b) Draw a flowchart indicating systems approach to transport planning. What are the various components of transportation system planning?

4 + 8= 12

Group – E

8.(a) Explain briefly about trip generation. What are the two basic tools for trip generation analysis?

(b) A large suburban zone on the outskirts of a city is likely to have the following activities and housing development in the next 10 years. Calculate the total trip attractions.
Number of DU= 3000
High school students= 800
Elementary school students=1800
Shopping centre retail employees= 200
Other retail employees= 100
Non retail employees=50

5 + 7= 12

9. (a) Give a brief description of the elements of urban transport planning.

(b) Write a short note on Transport Demand Management.

6 + 6 = 12