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) The number of vehicles that pass through a transverse line of road at a given time in a specified direction is called
(a) traffic studies (b) traffic flow
(c) traffic origin (d) traffic destination.

(ii) An intersection that is provided for different levels of road is called
(a) intersection at grade (b) grade separated intersection
(c) channelized intersection (d) rotary intersection.

(iii) Which type of parking facility is convenient for all types of user?
(a) Kerb parking (b) Off street parking
(c) Parallel parking (d) 90 degree parking.

(iv) Traffic flow is
(a) static (b) dynamic
(c) static and dynamic (d) may be static or dynamic.

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

(vi) The traffic survey is conducted during
(a) harvest season (b) harvest and lean season
(c) rainy season (d) summer season.

(vii) In India for design of roads pedestrian is considered as
(a) element of traffic (b) intruder in traffic
(c) essential part of traffic (d) controller of traffic .

(viii) Which of the following roads are congested during peak hours?
(a) Rural roads (b) Urban roads
(c) Highways (d) Express ways.

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

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

Group – B

2. (a) Write a short note on the road user characteristics that are taken into consideration in traffic engineering.

(b) With the help of a neat sketch show the different elements of a rotary intersection.

6 + 6 = 12

3. (a) Write short notes on Headway, Spacing and Delay of vehicles.

(b) Derive the relationship between speed, volume and density with proper diagrams.

6 + 6 = 12

Group – C

4. (a) Write a short note on:
(i) Parking Studies
(ii) Traffic Management Measures.

(b) Define with the help of figure Informatory sign, Warning sign and Regulatory sign.

(3 + 3) + 6 = 12

5. (a) Write short notes on Traffic volume Study, Spot Speed Study, Origin and Destination study.

(b) What are the advantages and disadvantages of traffic signal? Write a short note on Warning Sign.

6 + (3 + 3) = 12

Group – D

6. What is congestion management process? What are the requirements for CMP? How is the CMP valuable for Metropolitan Planning Organization? Enlist few benefits of CMP.

(2 + 3 + 4 + 3) = 12

7. (a) Define with the help of a figure the transportation planning process.

   (b) What are the various stages involved in transportation planning process?

6 + 6 = 12

Group – E

8. (a) Explain the four-step approach in modeling transportation demand?

   (b) What are visualization techniques, and how are they used in transportation planning?

6 + 6 = 12

9. (a) Explain briefly about the two elements used in the preparation of a comprehensive transportation plan to guide improvements to the transportation system.

   (b) What is the relationship between land use and transportation? What are the requirements for considering land use and economic development in the transportation planning process?

6 + 6 = 12