A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 59105

B.E./B.Tech. DEGREE EXAMINATION, MAY 2022

Elective

Civil Engineering

15UCE905 - Traffic Engineering and Management

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer All Questions

PART A - (10x 1 = 10 Marks)

1. The instantaneous speed of a vehicle at a specified location is called as CO1- R

   (a) Spot speed (b) Journey speed

   (c) Running speed (d) Mean speed

2. The distance between two consecutive vehicles is called CO1- U

   (a) Space Headway (b) Time Headway (c) Jam Density (d) Traffic flow

3. The type of signal were green period varies and are related to actual demand made by traffic are known as --- signal CO2- R

   (a) Fixed (b) Vehicle actuated

   (c) Optimum (d) Semi vehicle actuated

4. The study of traffic engineering is divided into how many major categories CO2- U

   (a) Five (b) Six (c) Seven (d) Eight

5. Weaving traffic is a CO3- R

   (a) combination of merging & diverging traffic (b)straight traffic

   (c) merging traffic (d)None of the above

6. In traffic engineering the elements are classified into how many categories CO3- R

   (a) One (b) Two (c) Three (d) Four

7. Schematic representation of all the accidents occurring at a particular location is known as CO4- U

(a) Collision diagram (b) Phase diagram

(c) Regression diagram (d) None of these

8. Three Es of road safety program are CO4- R

(a)Evaluation, Engineering, Enforcement (b) Evaluation, Engineering, Education

(c) Education, Engineering, Enforcement (d) None of the above

9. Traffic System Management is CO5- U

(a) Short term measures to use transport facilities (b) Long term demand

(c) Trip assignment method (d) None of these

10. Highway capacity of a traffic lane is the ability of the road way to allow ----- traffic flow CO5- R

(a)Maximum (b) Minimum

(c) Moderate (d) Average

PART – B (5 x 2= 10Marks)

11. State any two advantages of simulation technique in traffic engineering. CO1- U

12. What is meant by optimum cycle time? CO2- U

13. State the draw backs of roundabout. CO3- U

14. List the components of road user cost. CO4- U

15. List the factors that affect capacity. CO5- U

PART – C (5 x 16= 80Marks)

16. (a) Explain different methods of spot speed measurement CO1-U (16)

Or

(b) (i) Explain the car following theory CO1 -U (8)

(ii) Explain the relationship between flow and density CO1 -U (8)

17. (a) Compare the various types of coordinated signal clearly indicating advantages and disadvantages of each system CO2 -U (16)

Or

(b) The average normal flow of traffic on cross roads A and B during design period are 400 and 250 PCU/hr the saturation flow values on these roads are estimated as 1250 and 1000 PCU/hr respectively. The all red time for pedestrian crossing is 12 secs. Design two phase signal with pedestrian crossing by Webster CO2 -U (16)

method.

18. (a) (i) State the need for sampling and list the various types of sample. CO3- App (8)

(ii) List the applications of significance testing for traffic engineering problems CO3- App (8)

Or

(b) Traffic flow in an urban section at the intersection of two highways in the design year is given below. CO3- App (16)

Approach	Left turning	Straight ahead	Right turning
	Vehicles in PCU/hr	Vehicles in PCU/hr	Vehicles in PCU/hr
N	415	543	350
E	408	450	402
S	549	350	424
W	450	423	493

The highways at present intersect at right angles and have a carriageway width of 15m. Design the rotary intersection making suitable assumptions

19. (a) List the various causes of accidents and explain the various measures that can be taken to reduce accidents. CO4-U (16)

Or

(b) Explain in detail accident reporting and recording procedure. CO4 -U (16)

20. (a) Explain the various traffic management systems. CO5- U (16)

Or

(b) Explain with neat sketch the various levels of service and factors considered in evaluation of level of service. CO5- U (16)

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