

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Semester Examination, May 2019**

**Programme Name: B. Tech. (Civil +ID)**

**Semester : VIII**

**Course Name: Traffic Engineering**

**Time : 03 hrs**

**Course Code: CEEG467**

**Max. Marks : 100**

**Nos. of page(s) : 02**

**Instructions: Be brief and relevant. Use flow-charts, diagrams and tables, wherever necessary.**

**SECTION A**

S. No.		Marks	CO
Q 1	Explain four important benefits of general concept of Level of Service?	05	CO1
Q 2	Compare various traffic regulation measures based on five characteristics?	05	CO2
Q 3	What is the importance of providing pedestrian phase in a traffic signal?	05	CO3
Q 4	List five criteria on which intersection design depends on and how they influence the design process?	05	CO4

**SECTION B**

Q 5	What are advantages and disadvantages of a traffic signal? Explain different types of traffic signals?	10	CO3
Q 6	What are the general principles of signal design? List down three methods of signal design?	10	CO3
Q 7	What do you mean by at-grade intersections? What are the basic requirements of at-grade intersection from various geometrical parameters?	10	CO4
Q 8	What are the advantages and disadvantages of a traffic rotary?  <b>OR</b> List and Explain various design factors for rotary intersections?	10	CO4

**SECTION-C**

Q 9	Evaluate the scope of traffic engineering in planning transport facilities in an urban municipal system vis-à-vis its objectives? Discuss how Traffic characteristics are considered for planning and design of various geometric design parameters?	20	CO1
Q 10	Explain the complete process of measurement of Spot Speed using Enoscope method. What are the application of Spot Speed Survey? How the presentation of Spot Speed data. Spot speed survey data on a certain highway stretch is given below:	20	CO2

Speed, KMPH	vehicles observed	Speed, KMPH	vehicles observed
0-10	20	50-60	268
10-20	25	60-70	125
20-30	80	70-80	58
30-40	90	80-90	40
40-50	195	90-100	25

Determine (i) upper and lower values of speed limits for regulation of mixed traffic flow (ii) the design speed for checking the geometric design elements of the highway.

OR

With the help of five traffic analysis zones as a part of city, explain in detail the process of carrying out Origin destination survey? What are five most important parameters of an OD matrix? How can you code Productions and Attractions within an OD matrix? List various methods of presentation of an OD survey data.

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**SECTION A**

S. No.		Marks	CO
Q 1	How many applications of traffic engineering are prevalent in current traffic scenario?	05	CO1
Q 2	Discuss benefits of traffic markings over traffic signages in an urban area?	05	CO2
Q 3	Define following terms: (i) Cycle (ii) Phase (iii) Interval	05	CO3
Q 4	Explain traffic island and its various applications.	05	CO4

**SECTION B**

Q 5	List and define various types of traffic signal systems? Explain three general systems of traffic signal Design?	10	CO3
Q 6	What are the various methods of providing facilities to the pedestrians to cross the road in an urban area? Explain importance of these methods.	10	CO3
Q 7	Define and neatly draw the channelized and unchannelised intersections? What are the advantages of channelized intersections?	10	CO4
Q 8	What are the advantages of conducting accident studies? What are the various causes of traffic accidents within the four basic elements?  <b>OR</b> Draw neatly various shapes of the rotary islands and explain benefits of a rotary.	10	CO4

**SECTION-C**

Q 9	Describe in detail, various forms of Road user characteristics and Vehicular Characteristics along with their definitions. How these are important to create an environment for planning and design of traffic facilities?	20	CO1								
Q 10	Explain the difference between Spot Speed survey and Speed delay survey in terms of objectives and process of collection of data? Spot speed survey data on a certain highway stretch is given below:  <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Speed, KMPH</th> <th>vehicles observed</th> <th>Speed, KMPH</th> <th>vehicles observed</th> </tr> </thead> <tbody> <tr> <td>0-10</td> <td>25</td> <td>50-60</td> <td>255</td> </tr> </tbody> </table>	Speed, KMPH	vehicles observed	Speed, KMPH	vehicles observed	0-10	25	50-60	255	20	CO2
Speed, KMPH	vehicles observed	Speed, KMPH	vehicles observed								
0-10	25	50-60	255								

10-20	30	60-70	130
20-30	85	70-80	65
30-40	89	80-90	45
40-50	188	90-100	20

Determine (i) upper and lower values of speed limits for regulation of mixed traffic flow (ii) the design speed for checking the geometric design elements of the highway.

OR

How parking studies help in planning for parking in an urban area? Explain three most important aspects to be considered during the parking study investigation. List down different formats of parking is prevalent in an urban area and compare them using various parameters.