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SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech IV Year I Semester Regular & Supplementary Examinations Feb-2021**ELEMENTS OF ROAD TRAFFIC SAFETY**

(Common to All)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a Briefly explain about road accidents and how a traffic engineer plays a major role in prevention of it. 6M
- b Analyze various road geometric design elements and how they are related to cause of road accidents. 6M

OR

- 2 a What are the various legislative and education measures to be adopted in prevention of road accidents? 6M
- b Come out with a brief explanation about parking and its influence on road accidents. 6M

UNIT-II

- 3 a What are the basic principles of traffic regulation? 6M
- b Give a detailed discussion about regulation of speed. 6M

OR

- 4 a Briefly explain about zoning and parking space requirement standards. 6M
- b Identify the various methods that should be adopted in design of on-street parking and give a brief explanation about parallel parking. 6M

UNIT-III

- 5 Discuss in brief about different types of traffic signs with two examples for each type. 12M

OR

- 6 a What do you know about Informatory signs and indicate different types of it with neat sketch? 6M
- b Give a brief discussion about Location, Height & Maintenance of traffic signs. 6M

UNIT-IV

- 7 a Explain briefly about Fixed-Time signals and Vehicle-Actuated signals. 6M
- b What is meant by Warrants for signals? Explain in detail about different types warrants laid by IRC. 6M

OR

- 8 A fixed time 2 phase signal is to be provided at an intersection having a North-South and East-West road where only straight ahead traffic is permitted. The design hour flows from the various arms and the saturation flows for these arms are given in the following table :

Type of flow	North	South	East	West
Design hour flow (q) in PCU s/hour	800	400	750	1000
Saturation flow (s) in PCU s/hour	2400	2000	3000	3000

Calculate the optimum cycle time and green times for the minimum overall delay. The Intergreen time should be the minimum necessary for efficient operation. The time lost per phase due to starting delays can be assumed to be 2 seconds. The value of the amber period is 2 seconds.

UNIT-V

- 9 a What are general principles of longitudinal pavement markings? **6M**
 - b Explain briefly about commonly used Materials and Colours in road markings. **6M**
- OR**
- 10 a Briefly explain how the lightning system is arranged at rotary intersections with neat sketch. **6M**
 - b Explain the concept of lighting at bends with necessary recommendations. **6M**

*** END ***