SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR

Siddharth Nagar, Narayanavanam Road – 517583

(AUTONOMOUS)

QUESTION BANK (DESCRIPTIVE)

Subject with Code: Elements of Road Traffic Safety (16CE145)	**Course & Branch**: B.Tech (EEE, ME,ECE,CSE,CSIT&AG)
Year & Sem: IV-B.Tech & I-Sem	**Regulation:** R16

UNIT –I

ROAD ACCIDENTS – CAUSES & PREVENTION

1. Briefly explain about road accidents and how a traffic engineer plays a major role in prevention of it.
[L2] [CO1] 12M

2. Give a detailed discussion about Accident situation in India. [L2] [CO1] 12M

3. Compare the road accidents in various countries with regarding to different aspects. [L2] [CO1] 12M

4. Analyze various road geometric design elements and how they are related to cause of Road accidents.
[L3] [CO1] 12M

5. Develop your answer about the following elements in view of causing road accidents.

[L3] [CO1] 12M

    a) The vehicle   b) The driver

    c) Speed   d) Weather

6. Come out with a brief explanation about parking and its influence on road accidents. [L2] [CO1] 12M

7. Identify the various measures to be taken into account while designing of road elements in order to prevent the road accidents. [L3] [CO1] 12M

8. Apply your knowledge as a graduate and how u suggest various measures to be considered in view of controlling the Road Accidents. [L3] [CO1] 12M

9. Bring out the various legislation and education measures to be adopted in prevention of Road accidents. [L2] [CO1] 12M

10. Give an account on various road accident cost methods. [L2] [CO1] 12M

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UNIT –II

REGULATION OF TRAFFIC AND PARKING

1. a) What are the basic principles of Traffic regulation?   [L1] [CO2] 6M
   b) List out various Traffic Laws.   [L1] [CO2] 6M

2. a) Give a detailed discussion about Regulation of speed.   [L2] [CO2] 6M
   b) Compare and discuss about Speed limits in rural and urban areas.   [L2] [CO2] 6M

3. a) What are the various enforcement methods and instruments for detection of speed violators.
                                                                              [L1] [CO2] 6M
   b) Briefly explain about speed zoning.   [L1] [CO2] 6M

4. Analyze various aspects which are necessary in regulation of vehicles.   [L3] [CO2] 12M

5. Develop your answer about the following elements in view of regulation concerning the driver.
                                                                              [L3] [CO2] 12M

   a) Licensing of the driver   b) Requirements of physical fitness
   c) Age of drivers   d) Disqualification and endorsement of licences

6. Explain in detail about various general rules should be adopted in concern to traffic. [L2] [CO2] 12M

7. a) What are the ill-effects of parking.   [L1] [CO2] 6M
   b) Briefly explain about zoning and parking space requirement standards.   [L1] [CO2] 6M

8. Identify the various methods that should be adopted in design of on-street parking and give a brief explanation about parallel parking.   [L3] [CO2] 12M

9. Briefly explain about various traffic regulatory measures that should be considered for On-street Parking.   [L2] [CO2] 12M

10. Give a brief discussion about different types of Off-street parking facilities.   [L2] [CO2] 12M

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UNIT –III

TRAFFIC SIGNS

1. a) Briefly explain the importance of traffic signs. [L2] [CO3] 6M
   b) Why traffic signs require international standardization? [L1] [CO3] 6M

2. Give a detailed discussion about different types of traffic signs. [L2] [CO3] 12M

3. a) What are the various general principles of traffic signs. [L1] [CO3] 6M
   b) Briefly explain about traffic signs situation in India. [L2] [CO3] 6M

4. Draw different types of Warning signs with necessary specifications. [L2] [CO3] 12M

5. Develop your answer about the following elements in view of traffic signs. [L3] [CO3] 12M
   a) Prohibitory signs   b) Warning signs
   c) Informatory signs   d) Mandatory signs

6. Draw different types of Prohibitory & Mandatory signs by indicating necessary specifications.
   [L2] [CO3] 12M

7. What do you know about Informatory signs and indicate different types of it with neat sketch.
   [L1] [CO3] 12M

8. Briefly explain about Indication signs and Direction signs with neat sketch. [L2] [CO3] 12M

9. Draw a neat sketch in regarding to following signs: [L2] [CO3] 12M
   a) Advance direction signs   b) Overhead signs
   c) Route marker signs   d) Place identification signs

10. Give a brief discussion about Location, Height & Maintenance of traffic signs. [L2] [CO3] 12M

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UNIT –IV

TRAFFIC SIGNALS

1. a) What are the advantages and disadvantages of traffic signals.   [L1] [CO4] 6M

  b) Briefly explain the concept of signal indications.   [L2] [CO4] 6M

2. a) What is meant by Signal Face, explain it with neat sketch.   [L1] [CO4] 6M

  b) Briefly explain the concept of illumination of the signals with detailed specifications.

    [L2] [CO4] 6M

3. As per various countries practices how Amber period, Red/Amber period and Intergreen period is determined.   [L2] [CO4] 12M

4. Explain briefly about Fixed-Time signals and Vehicle-Actuated signals.   [L2] [CO4] 12M

5. 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 :   [L4] [CO4] 12M

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.

6. What is meant by Warrants for signals and explain in detail about different types warrants laid by IRC.   [L1] [CO4] 12M

7. a) Why co-ordination of signals is needed and give its objectives.   [L1] [CO4] 6M

  b) Briefly explain different types of co-ordinated signal system.   [L2] [CO4] 6M

8. a) What is meant by Signal approach dimensions and explain how to determine approach dimensions for a two phase cross-roads.   [L1] [CO4] 6M

b) The following table gives the flows in the arms of an intersection where a two phase signal is to be designed. [L4] [CO4] 6M

Arm	*Flow (vehicle/hour)*
North	4000
South	3800
East	1000
West	900

Determine the proportion of dimensions of the approaches and the green times for the two phases.

9. List out various Traffic control methods & explain any four of them in detail. [L2] [CO4] 12M

10. a) What do you meant by Area traffic control and give the objectives of it. [L1] [CO4] 6M

   b) Give a brief discussion about Delay at signalised intersections. [L2] [CO4] 6M

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UNIT –V

ROAD MARKINGS & STREET LIGHTING

1. a) What are the functions of road markings & List out the various types of road markings.

   [L1] [CO5] 6M

   b) What are general principles of longitudinal pavement markings?   [L1] [CO5] 6M

2. a) Explain briefly about commonly used Materials and Colours in road markings.   [L2] [CO5] 6M
   b) Briefly explain about stop lines with neat sketch.   [L2] [CO5] 6M

3. Explain briefly about the following terms with neat sketches:
   a) Carriageway width reduction transition markings.   [L2] [CO5] 6M
   b) Obstruction approach markings.   [L2] [CO5] 6M

4. a) Explain the concept of stop lines with neat sketch.   [L2] [CO5] 6M
   b) What is meant by pedestrian crossings explain with neat sketch.   [L1] [CO5] 6M

5. Develop your answer about the following elements in view of road markings.   [L3] [CO5] 12M
   a) Centre lines   b) Traffic lane lines
   c) No overtaking zone markings   d) Pavement edge lines

6. a) Why street lighting is needed for road users.   [L1] [CO5] 6M
   b) Define the following terms: [L2] [CO5] 6M
      i) Luminous flux & Lumen   ii) Steradian & Illumination
      iii) Lighting system   iv) Outreach & Overhang

7. a) How the Discernment by artificial lighting is possible, Explain different ways.   [L1] [CO5] 6M
   b) Briefly explain about zoning and parking space requirement standards.   [L2] [CO5] 6M

8. Explain about the following terms in view of Street lighting.   [L2] [CO5] 12M
   a) Mounting height   b) Spacing of lanterns
   b) Single-sided lantern   d) Central mounting lantern

9. Briefly explain about various types of Lamps used in street lighting in view of road traffic safety at
   night time on roads.   [L2] [CO5] 12M

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10. a) Briefly explain how the lightning system is arranged at rotary intersections with neat sketch.

                                                          [L2] [CO5] 6M

    b) Explain the concept of lighting at bends with necessary recommendations.   [L2] [CO5] 6M

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