Course Code: 19CE0129 **R19**

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
Siddharth Nagar, Narayanavanam Road – 517583
QUESTION BANK (DESCRIPTIVE)

Subject with Code: ERTS (19CE0129) **Course & Branch: B.Tech (ME, EEE, ECE, CSIT & CSE)**
Year & Sem: III B.Tech & I-Sem

UNIT –I
ROAD ACCIDENTS – CAUSES & PREVENTION

1	a) Briefly explain about road accidents and how traffic engineer plays role in prevention of road accident? b) Explain about the engineering uses in collection of accident data?	[L2][CO1] [L2][CO1]	**[7M]** **[5M]**
2	Give a detailed discussion about accident situation in India with past accident data.	[L2][CO1]	**[12M]**
3	How results are interpreted on road accidents in various countries. List the fatality rates from different countries?	[L1][CO1]	**[12M]**
4	Analyze the various road geometric design elements and how they are related to cause Road accidents.	[L3][CO1]	**[12M]**
5	Discuss your answer about the following elements in view of causing road accidents. i) The vehicle ii) Weather iii) Speed	[L2][CO1]	**[12M]**
6	a) Come out with brief explanation about parking and its influence on road accidents. b) Explain about the enforcement uses in collection of accident data?	[L2][CO1] [L2][CO1]	**[7M]** **[5M]**
7	Identify the various measures to be taken into account to prevent the accident caused by i) Two wheeler driver ii) Pedestrian	[L2][CO1] [L2][CO1]	**[6M]** **[6M]**
8	Apply your knowledge as a graduate and how you suggest various measures to be considered in view of controlling the Road Accidents.	[L3][CO1]	**[12M]**
9	a) Give the detailed notes on cost of road accidents. b) Apply your knowledge to suggest the preventive measures for road accidents by cyclist.	[L1][CO1] [L2][CO1]	**[5M]** **[7M]**
10	Bring out the various legislation and education measures to be adopted in prevention of road accidents.	[L1][CO1]	**[12M]**

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UNIT –II
REGULATION OF TRAFFIC AND PARKING

1	a) What are the needs for traffic regulation? b) List out the various Traffic Laws as per Indian Motor Vehicle Act.	[L1][CO2] [L1][CO2]	**[6M]** **[6M]**
2	a) Give the discussion about the regulation of speed at night. b) Discuss about the various speed limits in rural and urban areas.	[L2][CO2] [L2][CO2]	**[4M]** **[8M]**
3	a) What are the various enforcement methods and instruments used for detection of speed violators? b) Explain about speed zoning and criteria considered to determine speed zoning.	[L1][CO2] [L2][CO2]	**[5M]** **[7M]**
4	Explain the various aspects which are indicated in regulation of vehicles.	[L2][CO2]	**[12M]**
5	Develop your answers for the following elements in view of regulation concerning the driver. i) Licensing of the driver ii) Requirements of physical fitness iii) Disqualification and endorsement of licenses	[L2][CO2]	**[12M]**
6	Explain about the various rules adopted in concern to traffic for cyclist and pedestrians	[L2][CO2]	**[12M]**
7	a) What are the various ill-effects of parking? Write them in detail. b) Briefly explain about zoning and parking space requirement of IRC standards?	[L1][CO2] [L2][CO2]	**[6M]** **[6M]**
8	Identify the various common methods in design of On-street parking with sketches.	[L1][CO2]	**[12M]**
9	Briefly explain the 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) Write the importance of traffic signs. b) What are the various objectives in general principles of traffic signing?	[L1][CO4] [L1][CO4]	**[4M]** **[8M]**
2	Give a detailed discussion about the different types of traffic signs.	[L2][CO4]	**[12M]**
3	a) Why traffic signing requires International standardization? b) Briefly explain about traffic signs situation in India?	[L2][CO4] [L2][CO4]	**[6M]** **[6M]**
4	Briefly discuss about warning signs with neat sketches?	[L2][CO4]	**[12M]**
5	Develop your answer about the following elements in view of traffic signs. i) Prohibitory signs ii) Warning signs iii) Mandatory signs	[L2][CO4]	**[12M]**
6	Briefly discuss about Mandatory signs with neat sketches?	[L2][CO4]	**[12M]**
7	Discuss about Informatory signs and Route marker signs with neat sketch?	[L2][CO4]	**[12M]**
8	a) Briefly explain about Indication signs with neat sketch? b) Write the conditions for placing the overhead signs.	[L2][CO4] [L1][CO4]	**[6M]** **[6M]**
9	Explain with neat sketch the following signs: i) Advance direction signs ii) Overhead signs iii) Place identification signs	[L2][CO4]	**[12M]**
10	Describe in detail about the Location, Height &Maintenance of traffic signing.	[L2][CO4]	**[12M]**

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UNIT –IV
TRAFFIC SIGNALS

1	What is meant by traffic signals? What are the advantages & disadvantages of it?	[L1][CO3]	**[12M]**
2	a) Briefly explain the concept of signal indications in various country practices? b) Write a note on pedestrian signal indications.	[L2][CO3] [L1][CO3]	**[8M]** **[4M]**
3	a) What is meant by Signal Face, explain it with neat sketch? b) Explain the concept of illumination of signals with specifications.	[L1][CO3] [L2][CO3]	**[7M]** **[5M]**
4	A fixed time 2 phase signal is to be provided at an intersection having a North-South and an 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. Sketch the timing diagram for each phase.	[L3][CO3]	**[12M]**
5	How Amber period, Red/Amber period and intergreen period is determined in various countries practices?	[L1][CO3]	**[12M]**
6	What is meant by Warrants for signals and explain in detail about different types of warrants laid by I.R.C.?	[L1][CO3]	**[12M]**
7	a) Why co-ordination of signals is needed? b) Briefly explain the different types of co-ordinate signal system?	[L1][CO3] [L2][CO3]	**[4M]** **[8M]**
8	a) What is meant by signal approach dimensions and explain how to determine approach dimensions for a two phase cross-roads? b) The following table gives the flows in the arms of an intersection where a two phase signal is to be designed. Determine the proportion of dimensions of the approaches and the green times for the two phases ***Arm*** | ***Flow(vehicle/hour)*** North | 4000 South | 3800 East | 1000 West | 900	[L1][CO3] [L3][CO3]	**[8M]** **[4M]**
9	List out the various Traffic control methods &explain any four of them in detail?	[L1][CO3]	**[12M]**
10	a) What do you mean by Area traffic control and give the objectives of it? b) Give a brief discussion about Delay at signalized intersections.	[L1][CO3] [L2][CO3]	**[6M]** **[6M]**

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UNIT –V
ROAD MARKINGS & STREET LIGHTING

1	What are the functions of road markings & List out all 14 various types of road markings?	[L1][CO5]	**[12M]**
2	a) Explain briefly about commonly used materials and colours in road markings? b) Briefly explain about the stop lines with neat sketch?	[L2][CO5] [L2][CO5]	**[6M]** **[6M]**
3	Explain briefly about the following terms with neat sketches: a) Carriageway width reduction transition markings. b) Obstruction approach markings.	 [L2][CO5] [L2][CO5]	 **[6M]** **[6M]**
4	a) Explain the concept of centre lines with neat sketch? b) What is meant by pedestrian crossings and explain it with neat sketch?	[L2][CO5] [L1][CO5]	**[6M]** **[6M]**
5	Develop your answer about the following elements in view of road markings: i) Pavement edge lines iii) Traffic lane lines ii) No overtaking zone markings	[L2][CO5]	**[12M]**
6	a) Why street lighting is needed for road users? b) Define the following terms: i) Luminous flux & Lumen ii) Steradian iii) Lighting system	[L1][CO6] [L1][CO6]	**[5M]** **[7M]**
7	Briefly explain about the illumination of traffic rotaries with detailed sketch?	[L2][CO6]	**[12M]**
8	Explain about the following terms in view of Street lighting: i) Mounting height iii) Spacing of lanterns ii) Single-sided lantern iv) Central mounting lantern	[L2][CO6]	**[12M]**
9	Briefly explain about the various types of Lamps used in street lighting in view of road traffic safety at night time on roads?	[L2][CO6]	**[12M]**
10	a) Explain briefly about tunnel lighting? b) Write in detail about lighting at bends.	[L2][CO6] [L1][CO6]	**[6M]** **[6M]**

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