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Question Paper Code: U9176

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Open elective

Civil Engineering

21UCE976-ROAD SAFETY

(Common to All branches)

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART – A (5 x 1 = 5Marks)

- Standard car parking space should be at least m wide and m long
(a) 2.4 & 7.0 (b) 3.2 & 5.0 (c) 2.4 & 5.0 (d) 4.0 & 6.0 CO1-U
- A collision diagram is a representation that shows the spatial distribution of accidents at a particular location or area.
(a) Graphical (b) Imaginary (c) Mathematical (d) All the above CO1-U
- _____ refers to the various devices and equipment used on roads to improve safety, visibility, and efficiency.
(a) Road equipment (b) Vehicles devices (c) Volume count (d) Traffic survey CO1-U
- Which of these technologies has the potential to significantly improve road safety in cities?
(a) Autonomous vehicles (b) Electric vehicles (c) Hybrid vehicles (d) Diesel engines CO1-U
- _____ is a road safety concept that aims to eliminate fatal and severe injuries on the roads.
(a) Blur vision (b) Diminish vision (c) Vision bright (d) Vision Zero CO1-U

PART – B (5 x 3= 15Marks)

- Demonstrate the design of parking facilities in traffic engineering? CO1-U
- Execute the main purpose of traffic data analysis in road safety engineering. CO2-App

8. Identify the three main factors that affect signal design. CO3-App
9. Analyze the challenges and potential solutions for improving pedestrian safety in urban areas, particularly in relation to mixed -use developments and high - traffic areas. CO4-Ana
10. What does ITS stand for in the context of road safety? CO5-Ana

PART – C (5 x 16= 80Marks)

11. (a) Interpret the road safety scenario in India with the rest of the world, highlighting similarities and differences. CO2-App (16)
- Or
- (b) Discuss the various types of traffic surveys, their methodologies, and the challenges associated with conducting them. CO2-App (16)
12. (a) Discuss the role of road signs in providing crucial information to road users and promoting safe driving practices. CO3-App (16)
- Or
- (b) Demonstrate the steps involved in the assessment of road safety and elaborate the methods to Identify and Prioritize Hazardous Locations and Elements CO3-App (16)
13. (a) Discuss in detail about the geometric design of intersections influences road safety CO3-App (16)
- Or
- (b) Interpret the difference between road reconstruction and road rehabilitation, and what are the key steps involved in each process? CO3-App (16)
14. (a) Interpret between at grade intersections and grade separated intersections with sketches. CO5-Ana (16)
- Or
- (b) Explore innovative strategies to improve bicycle safety, including protected bike lanes, bike-sharing programs, and traffic calming measures. CO5-Ana (16)
15. (a) Explain the importance of road safety audits and tools for safety management systems in identifying safety issues and proposing appropriate measures. CO6-App (16)
- Or
- (b) Explain the concept of Vision Zero and its principles in achieving zero fatalities and severe injuries on the roads. CO6-App (16)