B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E.   **Semester: V**

Branch: Civil Engineering   **Duration: 3 hrs.**

Course Code: 23CV5PETRF   **Max Marks: 100**

Course: Traffic Engineering

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

			UNIT - I	CO	PO	Marks
1	a)		Discuss the scope and objectives of traffic engineering.	CO1	PO1	**06**
	b)		Mention the significance of road user characteristics and discuss the various factors which affect it.	CO1	PO1	**08**
	c)		A vehicle moving at 45 kmph speed was stopped by applying the brake and the length of skid mark was 14m. If the average skid resistance of the pavement is known to be 0.80, determine the brake efficiency of the vehicle.	CO1	PO3	**06**
			OR			
2	a)		Using neat sketches depict the relationship between fundamentals of traffic flow.	CO1	PO1	**06**
	b)		Describe the PIEV theory and its significance in understanding driver behavior.	CO1	PO1	**08**
	c)		A vehicle travelling at 45 kmph was stopped withing 2 seconds after the application of the brakes. Determine the average skid resistance.	CO1	PO3	**06**
			UNIT - II			
3	a)		Discuss the importance of carrying out traffic volume count studies in urban planning.	CO2	PO1	**10**
	b)		Describe the application and significance of Level of Service in assessing roadway performance.	CO2	PO1	**10**
			OR			
4	a)		Discuss the factors which affect the Passenger Car Unit (PCU) values.	CO2	PO1	**06**
	b)		Discuss the factors that influence parking demand.	CO2	PO1	**06**
	c)		Explain: i) Spot speed ii) Journey speed iii) Running speed iv) Space-mean speed	CO2	PO1	**08**

			UNIT - III			
5	a)		Describe the challenges associated with coordinating signals in a heterogeneous traffic environment.	CO3	PO1	**10**
	b)		The average normal traffic on roads 1 and 2 during design period are 440 and 280 pcu/hr; the saturation flows on these roads are 1500 and 1800 pcu/hr respectively. The all-red time required for pedestrian crossing is 12 seconds. Design two vehicular phase with pedestrian crossing by Webster's method.	CO3	PO3	**10**
			OR			
6	a)		Explain briefly the basic requirements of at-grade intersections and enumerate the various forms of intersections with neat sketches.	CO3	PO1	**10**
	b)		Draw a typical sketch of rotary intersection and mention various component parts. Discuss various design elements of rotary intersection.	CO3	PO1	**10**
			UNIT - IV			
7	a)		Discuss the importance of street lighting and the factors which influence the night visibility.	CO4	PO1	**10**
	b)		Discuss the measures that can be implemented to enhance traffic safety while minimizing environmental impact.	CO4	PO7	**10**
			OR			
8	a)		Discuss the strategies for promoting and integrating public transportation with non-motorized transport options such as pedestrian facilities and cycle tracks.	CO4	PO7	**10**
	b)		With neat sketches discuss collision and condition diagrams.	CO4	PO1	**10**
			UNIT - V			
9	a)		Discuss the different methods of Traffic Demand Management.	CO4	PO1	**10**
	b)		Explain how parking pricing aims to manage traffic flow in congested areas.	CO4	PO7	**10**
			OR			
10	a)		Discuss the role of Intelligent Transport Systems (ITS) in modern traffic management. Also, propose strategies to implement ITS effectively in urban areas to address traffic congestion and safety challenges.	CO4	PO7	**10**
	b)		Discuss the significance of traffic regulatory measures in ensuring road safety and efficient traffic flow.	CO4	PO1	**10**

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