

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025

Sixth Semester

Civil Engineering

CE3026- Traffic Engineering and Management

Regulations - 2021

Duration : 3 Hrs

Maximum: 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

Q.No	Questions	BLT	CO	Marks
1.	Define the term “Running Speed and Journey Speed” in traffic speed studies.	L1	1	2
2.	Compare ‘Traffic Capacity’ and ‘Traffic Density’	L2	1	2
3.	Distinguish ‘Time Mean Speed’ and ‘Space Mean Speed’	L2	2	2
4.	List out any eight major traffic problems of road traffic.	L1	2	2
5.	What are the various types of Travel Demand Management (TDM) techniques.	L1	3	2
6.	Justify the conditions for prohibiting right turn movement?	L2	3	2
7.	Write the formula to calculate capacity of a rotary.	L1	4	2
8.	Discuss with neat sketch presenting different elements in a rotary	L2	4	2
9.	Draw a typical parking inventory diagram with all its vital parts.	L2	5	2
10.	List out the various types of parking.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a i Illustrate the details that have to be collected while conducting parking inventory survey with a neat sketch.	L2	1	8
	ii Discuss the various methods of recording accidents. How to prevent the accidents by taking different measures in highway design.	L2	1	8
	Or			
	b i Summarize the different methods of collecting Origin Destination (OD) studies with its significance.	L2	1	8
	ii Explain the different statistical applications in traffic studies and forecasting with its significance.	L2	1	8
12.	a A passenger car weighing 2 tonnes is required to accelerate at a rate of 3 m/sec ² in the first year from a speed of 11 K.P.H. the Gradient is +1 percent and the road have a black topped surface. The frontal projection area of the car is 2.0m ² . The car tyre has radius of 0.33 m. The rear axle gear ratio is 3.82: 1 and the first gear ratio is 2.78: 1. Evaluate the engine horsepower needed and the speed of the engine. Make suitable assumptions.	L3	2	16

Or

- b i Evaluate the average skid resistance for a vehicle travelling at the speed of 12m/sec and stopped within 2 secs, after the application of brake. L3 2 8
- ii In a braking test, a vehicle of speed 10 m/sec was stopped by the full application of brakes and the skid marks were 6m in length. Evaluate and design the skid resistance of the pavement surface. L3 2 8
13. a Explain in detail about the different types of Traffic Demand Management Techniques. L2 3 16
- Or**
- b Demonstrate the various types of traffic signals and their functions. How are the signal timings decided? L2 3 16
14. a A rotary is proposed in a rural area at a location where two four - lane divided roads meet each other. The peak hour traffic flow is as follows: Design a rotary for the intersection. L5 4 16

Name of the Arm feeding traffic to the Intersection	Traffic Flow in PCUs/hour		
	Left	Straight	Right
N	350	450	250
E	450	490	300
S	275	400	390
W	390	500	275

Or

- b i The average normal flow of traffic on cross roads A and B during design period are 400 PCU per hour and 250 PCU per hour respectively, the saturation flow values on these roads are estimated as 1250 PCU per hour and 1000 PCU per hour respectively. The all – red time required for pedestrian crossing is 12 sec. Design two phase traffic signal with sketch by Webster’s method. L5 4 8
- ii The average normal flow of traffic on cross roads A and B during design period are 600 PCU per hour and 400 PCU per hour respectively, the saturation flow values on these roads are estimated as 2200 PCU per hour and 1000 PCU per hour respectively. The all – red time required for pedestrian crossing is 12 sec. Design two phase traffic signal with neat sketch. L5 4 8
15. a Develop a pedestrian facilities and cycle tracks in urban areas with neat sketches of as per IRC standards. L3 5 16
- Or**
- b i Solve the conflicts points for pedestrians and vehicles and explain them. L3 5 8
- ii Identify the factors for the design of Off-Street Parking. Explain it briefly. L3 5 8

