

**SRM VALLIAMMAI ENGINEERING COLLEGE**

**(An Autonomous Institution)**

SRM Nagar, Kattankulathur – 603 203

**DEPARTMENT OF AGRICULTURE ENGINEERING**

**QUESTION BANK**



**II SEMESTER  
PIS201 - TRANSPORT SAFETY  
Regulation – 2023**

**Academic Year 2024-2025**

*Prepared by*

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**DEPARTMENT OF MECHANICAL ENGINEERING**



**QUESTION BANK**  
**M.E. INDUSTRIAL SAFETY ENGINEERING**

**SUBJECT CODE/NAME: PIS201 - TRANSPORT SAFETY**

**SEM/YEAR : II / I YEAR**

<b>UNIT I      TRANSPORTATION OF HAZARDOUS GOODS</b>			
Transport emergency card (TREM) – driver training-parking of tankers on the highways-speed of the vehicle – warning symbols – design of the tanker lorries -static electricity-responsibilities of driver – inspection and maintenance of vehicles-check list- loading and decanting procedures – communication.			
<b>PART A</b>			
Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	What is the transport emergency card?	BT-1	Remembering
2.	What is the importance of TREM card?	BT-2	Understanding
3.	What is the function of the TREM card?	BT-3	Applying
4.	What size is a TREM card?	BT-3	Applying
5.	What is a trem card for hazardous goods?	BT-1	Remembering
6.	What is a Form 9 for hazardous waste?	BT-2	Understanding
7.	What is Form 5 hazardous waste?	BT-4	Analysis
8.	What is the need for Driver training?	BT-2	Understanding
9.	Write a note on experienced based driver training.	BT-2	Understanding
10.	What are the goals for driver training?	BT-6	Creating
11.	What are types of driver training?	BT-4	Analysis
12.	What is safety value in tank wagons?	BT-4	Analysis
13.	What is safety vent in fittings?	BT-6	Creating
14.	List the role of vapour extraction cock.	BT-6	Creating
15.	What is master value assembly?	BT-4	Analysis
16.	Write a note on blank flange.	BT-1	Remembering
17.	What is BTPN wagon?	BT-1	Remembering
18.	What is RLY TXR?	BT-5	Evaluating
19.	Mention the loco speed on the time of placement.	BT-1	Remembering
20.	What is the check in the gantry?	BT-5	Evaluating

21.	How the completion of loading is checked?	BT-3	Applying
22.	What is the limit of filling the DIP rods?	BT-5	Evaluating
23.	How the adequate stock of consumables is ensured in the decanting?	BT-2	Understanding
24.	Define shunting.	BT-3	Applying
25.	List the basic factors in stock – loss loading and operation loss.	BT-1	Remembering
<b>PART B</b>			
1.	Describe Form – 9 under Tran’s boundary Movement Document.	BT-1	Remembering
2.	Evaluate the ethical considerations involved in transporting hazardous goods, particularly concerning public safety and environmental	BT-5	Evaluating
3.	Why is the driver training important? Explain.	BT-1	Remembering
4.	What are the different types of driver training?	BT-2	Understanding
5.	Explain the significance of road safety and driver training education.	BT-2	Understanding
6.	Which are the safest road in the world? How these countries did achieved road safety?	BT-1	Remembering
7.	List the road safety solutions in transport safety.	BT-3	Applying
8.	Discuss the liability issues and legal implications for stakeholders involved in the transportation of hazardous goods.	BT-5	Evaluating
9.	Evaluate the effectiveness of emergency response plans and procedures for incidents involving hazardous goods transportation.	BT-4	Analyzing
10.	Discuss the regulatory framework governing the transportation of hazardous goods at the international level.	BT-6	Creating
11.	Explain the classification criteria for hazardous goods in transportation and provide examples for each class.	BT-5	Evaluating
12.	Analyze the importance of proper packaging and labeling in the transportation of hazardous goods.	BT-3	Applying
13.	Evaluate the role of training and certification programs for personnel involved in the transportation of hazardous goods.	BT-4	Analyzing
14.	Discuss the challenges and risks associated with the transportation of hazardous goods by road and propose mitigation strategies.	BT-4	Analyzing
15	Compare and contrast the transportation of hazardous goods by road, rail, air, and sea in terms of safety measures and regulations.	BT-5	Evaluating
16	Examine the environmental impact of accidents involving the transportation of hazardous goods and suggest preventive measures.	BT-5	Evaluating
17	Assess the role of technology, such as GPS tracking and remote sensing, in enhancing the safety of transporting hazardous goods.	BT-5	Evaluating

Introduction – factors for improving safety on roads – causes of accidents due to drivers and pedestrians-design, selection, operation and maintenance of motor trucks-preventive maintenance- check lists-motor vehicles act – motor vehicle insurance and surveys.

**PART A**

<b>Q.NO</b>	<b>QUESTIONS</b>	<b>BT LEVEL</b>	<b>COMPETENCE</b>
1.	How can intersections be designed to minimize accidents?	BT-2	Understanding
2.	What role does government policy play in promoting road safety initiatives?	BT-1	Remembering
3.	What are the leading causes of road accidents?	BT-1	Remembering
4.	How does driver fatigue affect road safety?	BT-1	Remembering
5.	What role does vehicle maintenance play in preventing accidents?	BT-2	Understanding
6.	How can technology improve road safety?	BT-2	Understanding
7.	What are the key factors contributing to pedestrian safety?	BT-4	Analyzing
8.	How do weather conditions impact road safety?	BT-6	Creating
9.	What are the differences in road safety regulations globally?	BT-4	Analyzing
10.	How effective are speed limits in reducing accidents?	BT-2	Understanding
11.	What measures can be taken to improve motorcycle safety?	BT-5	Evaluating
12.	How do distractions like smartphones affect driver behavior and road safety?	BT-3	Applying
13.	What strategies can be implemented to reduce drunk driving incidents?	BT-3	Applying
14.	How do road infrastructure and design influence safety?	BT-4	Analyzing
15.	What are the benefits and drawbacks of autonomous vehicles in terms of safety?	BT-4	Analyzing
16.	How does road rage contribute to accidents, and how can it be prevented?	BT-1	Remembering
17.	What role do seat belts and airbags play in reducing fatalities?	BT-2	Understanding
18.	How can education and awareness campaigns improve road safety?	BT-5	Evaluating
19.	What are the challenges faced in ensuring safety for cyclists?	BT-2	Understanding
20.	How do socioeconomic factors impact road safety?	BT-3	Applying
21.	What are the most effective methods for enforcing traffic laws?	BT-1	Remembering
22.	How does urbanization affect traffic congestion and safety?	BT-2	Understanding
23.	What are the risks associated with driving in developing countries?	BT-1	Remembering
24.	How does driver training influence road safety?	BT-3	Applying
25.	What are the psychological factors affecting driver behavior and safety?	BT-5	Evaluating

**PART B**

1.	Examine the impact of climate change on road transport safety and infrastructure resilience.	BT-1	Remembering
2.	Discuss the importance of road safety regulations in reducing traffic accidents and fatalities.	BT-5	Evaluating
3.	Analyze the impact of technological advancements on road transport safety, citing specific examples.	BT-1	Remembering
4.	Evaluate the effectiveness of speed limits in reducing road accidents and promoting safe driving behaviors.	BT-2	Understanding
5.	Compare and contrast the advantages and disadvantages of different types of road safety barriers.	BT-2	Understanding
6.	Examine the role of driver education and training programs in promoting road safety.	BT-1	Remembering
7.	Discuss the influence of human factors, such as fatigue and distraction, on road traffic accidents.	BT-3	Applying
8.	Evaluate the effectiveness of various road safety campaigns in raising awareness and changing behaviors.	BT-5	Evaluating
9.	Analyze the impact of road design and infrastructure on traffic safety and accident prevention.	BT-4	Analyzing
10.	Discuss the benefits and challenges of implementing autonomous vehicles for enhancing road safety.	BT-6	Creating
11.	Evaluate the role of law enforcement in enforcing road traffic regulations and ensuring safety on the roads.	BT-5	Evaluating
12.	Examine the relationship between vehicle maintenance and road safety, citing relevant examples.	BT-3	Applying
13.	Discuss the ethical considerations surrounding the implementation of road safety measures, such as speed cameras and sobriety checkpoints.	BT-4	Analyzing
14.	Analyze the economic costs associated with road traffic accidents and the benefits of investing in road safety measures.	BT-4	Analyzing
15.	Evaluate the effectiveness of measures aimed at reducing pedestrian and cyclist fatalities on the roads.	BT-4	Analyzing
16.	Discuss the role of government policies and regulations in promoting road transport safety at the national and international levels.	BT-4	Analyzing
17.	Examine the impact of climate change on road transport safety and infrastructure resilience.	BT-4	Analyzing

**UNIT III DRIVER AND SAFETY**

Driver safety programme – selection of drivers – driver training-tacho-graph-driving test-driver’s responsibility-accident reporting and investigation procedures-fleet accident frequency-safe driving incentives-slogans in driver cabin-motor vehicle transport workers act- driver relaxation and rest pauses – speed and fuel conservation – emergency planning and Haz mat codes

**PART A**

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	Define defensive driving.	BT-2	Understanding
2.	What does ABS stand for in the context of vehicle safety?	BT-1	Remembering
3.	Describe the purpose of a blind-spot mirror.	BT-1	Remembering
4.	Explain the importance of maintaining a safe following distance.	BT-1	Remembering
5.	What is the purpose of wearing a seatbelt?	BT-2	Understanding
6.	Define distracted driving and give an example.	BT-2	Understanding
7.	Explain the concept of a "three-point turn."	BT-4	Analyzing
8.	Describe the role of speed limits in road safety.	BT-6	Creating
9.	What does DUI stand for, and why is it dangerous?	BT-4	Analyzing
10.	Define hydroplaning and explain how it can be avoided.	BT-2	Understanding
11.	Describe the purpose of traffic signs and signals.	BT-5	Evaluating
12.	Explain the significance of using turn signals while driving.	BT-3	Applying
13.	Define road rage and explain how it can affect driving safety.	BT-3	Applying
14.	Describe the steps to perform a proper parallel parking maneuver.	BT-4	Analyzing
15.	Explain the importance of checking blind spots before changing lanes.	BT-4	Analyzing
16.	What does "yielding" mean in the context of driving?	BT-1	Remembering
17.	Describe the purpose of a car's airbags.	BT-2	Understanding
18.	Explain why it's crucial to adjust mirrors before driving.	BT-5	Evaluating
19.	Define skidding and describe how to regain control of a skidding vehicle.	BT-2	Understanding
20.	Explain the concept of defensive parking.	BT-3	Applying
21.	Describe the purpose of rumble strips on roads.	BT-1	Remembering
22.	What is the purpose of a car's anti-lock braking system (ABS)?	BT-2	Understanding



23.	Define tailgating and explain why it's dangerous.	BT-1	Remembering
24.	Explain the importance of regular vehicle maintenance for safety.	BT-3	Applying
25.	Describe the role of defensive driving techniques in preventing accidents.	BT-5	Evaluating

**PART B**

1.	Discuss the role of driver fatigue in road accidents, and propose strategies to mitigate its impact on road safety.	BT-2	Understanding
2.	Evaluate the impact of driver psychology, including attitudes, beliefs, and risk perception, on road safety outcomes.	BT-5	Evaluating
3.	Analyze the role of fatigue management policies and regulations in reducing the risk of fatigue-related accidents among professional drivers	BT-1	Remembering
4.	Analyze the effectiveness of driver training programs in reducing traffic accidents and improving road safety.	BT-2	Understanding
5.	Evaluate the importance of driver behavior in promoting road safety and reducing the risk of accidents.	BT-2	Understanding
6.	Discuss the impact of distracted driving on road safety, and suggest measures to prevent it.	BT-1	Remembering
7.	Compare and contrast the advantages and disadvantages of autonomous vehicles in enhancing road safety.	BT-3	Applying
8.	Assess the role of technology, such as driver-assist systems, in improving road safety and reducing accidents.	BT-5	Evaluating
9.	Examine the influence of road infrastructure on driver behavior and its implications for road safety.	BT-4	Analyzing
10.	Evaluate the effectiveness of speed limits and enforcement in reducing road accidents and fatalities.	BT-6	Creating
11.	Discuss the psychological factors that affect driver behavior and their contribution to road safety.	BT-5	Evaluating
12.	Analyze the relationship between driver education and road safety outcomes, including attitudes, knowledge, and skills.	BT-3	Applying
13.	Evaluate the impact of alcohol and drug use on driver performance and road safety.	BT-4	Analyzing
14.	Discuss the importance of vehicle maintenance in ensuring roadworthiness and promoting safety on the roads.	BT-6	Creating
15	Assess the effectiveness of road safety campaigns and public awareness initiatives in changing driver behavior.		
16	Examine the role of government policies and regulations in promoting road safety and reducing traffic accidents.		

17	Discuss the challenges and opportunities of integrating vulnerable road users, such as pedestrians and cyclists, into the transportation system to enhance safety.		
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**UNIT IV ROAD SAFETY**

Road alignment and gradient-reconnaissance-ruling gradient-maximum rise per k.m.- factors influencing alignment like tractive resistance, tractive force, direct alignment, vertical curves breaking- characteristics of vehicle-skidding-restriction of speeds-significance of speeds Pavement conditions –Sight distance – Safety at intersections – Traffic control lines and guideposts-guard rails and barriers - street lighting and illumination overloading-concentration of driver. Plant railway: Clearance- track-warning methods-loading and unloading-moving cars safety practices.

**PART A**

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	List any four uses of accident data.	BT-2	Understanding
2.	Define noise pollution.	BT-1	Remembering
3.	How is glare reduced?	BT-1	Remembering
4.	Write down the techniques used for prevention of road accidents.	BT-1	Remembering
5.	Write the advantages of integrating public transportation.	BT-2	Understanding
6.	Write the principle adopted for tidal flow operation.	BT-2	Understanding
7.	List out the various environmental hazards due to road traffic	BT-4	Analyzing
8.	What are the needs for street lighting?	BT-6	Creating
9.	What is meant by Integrated public transportation?	BT-4	Analyzing
10.	What are the various types of conflicts at intersections?	BT-2	Understanding
11.	Give the conflict point sketch of one-way regulation on both roads.	BT-5	Evaluating
12.	What are the causes for traffic related air pollution	BT-3	Applying
13.	Draw a diagram of a staggered T Junction and indicate how it is safer than a four arm junction	BT-3	Applying
14.	What are the factors influence night visibilities?	BT-4	Analyzing
15.	Draw the different types of luminaries' distribution.	BT-4	Analyzing
16.	Identify the cause of accidents by pedestrians.	BT-6	Creating
17.	Write the various lamps used for highway lighting.	BT-2	Understanding
18.	What are the objectives of accident studies?	BT-5	Evaluating
19.	Differentiate between Silhouette and reverse silhouette.	BT-3	Applying
20.	What are the factors that influence night visibility of the driver?	BT-3	Applying
21.	Give the conflict point of two way streets and mention the points.	BT-1	Remembering



22.	Draw a neat sketch for the lighting layouts for median lighting.	BT-2	Understanding
23.	What are causes for traffic related noise generation	BT-5	Evaluating
24.	What are the merits of encouraging walk and non-motorized mode?	BT-3	Applying
25.	Build points on Speed change lanes.	BT-5	Evaluating

**PART B**

1.	List out the various methods of carrying out speed and delay study	BT-1	Remembering
2.	List out the various methods of conducting moving observer method of journey speed studies.	BT-6	Creating
3.	List out the advantages and disadvantages of manual method of volume count survey.	BT-2	Understanding
4.	Classify the different methods of presenting O&D Data.	BT-2	Understanding
5.	Explain in brief the various levels of service as per Indian Roads congress (IRC) Standards for arterial roads and down town streets.	BT-1	Remembering
6.	Show the details which are to be collected during the parking studies.	BT-3	Applying
7.	Illustrate the details that have to be collected while conducting parking inventory survey with a neat sketch.	BT-5	Evaluating
8.	Identify the factors for the design of Off-Street Parking. Explain it briefly.	BT-4	Analyzing
9.	List out the various factors which affect the capacity and level of service.	BT-4	Analyzing
10.	Classify the various methods of Off-street parking facilities.	BT-5	Evaluating
11.	List out the various factors cause accidents in traffic engineering with ICRC standards.	BT-2	Understanding
12.	Explain the different statistical applications in traffic studies and forecasting with its significance	BT-4	Analyzing
13.	Discuss about collision and condition diagrams with a neat sketch	BT-6	Creating
14.	What are the various traffic studies in traffic engineering? Draw its flow chart.	BT-1	Remembering
15	Summarize the different methods of collecting Origin Destination (OD) studies with its significance.	BT-2	Understanding
16	Discuss the various methods of recording accidents. How to prevent the accidents by taking different measures in highway design.	BT-2	Understanding
17	Enumerate the various points to be considered to promote public transportation and non-motorized transportation.	BT-2	Understanding

**UNIT V SHOP FLOOR AND REPAIR SHOP SAFETY**

Transport precautions-safety on manual, mechanical handling equipment operations-safe driving- movement of cranes-conveyors etc., servicing and maintenance equipment-grease rack operation- wash rack operation-battery charging-gasoline handling-other safe practices off the road motorized equipment.

**PART A**

Q.NO	QUESTIONS	BT LEVEL	COMPETENCE
1.	List out the various types of Travel Demand Management (TDM) techniques.	BT-2	Understanding
2.	List the principle methods of tidal flow operation	BT-1	Remembering
3.	List any two advantages of closing side streets	BT-1	Remembering
4.	Define - Traffic Calming	BT-4	Analyzing
5.	Define Chicane	BT-2	Understanding
6.	Define – ITS & List out the Uses.	BT-1	Remembering
7.	Explain Transportation System Management (TSM)?	BT-4	Analyzing
8.	Summarize the advantage of exclusive bus lanes.	BT-6	Creating
9.	What is the PCU value for buses in BRT approach?	BT-5	Evaluating
10.	Illustrate what is meant by traffic regulations?	BT-2	Understanding
11.	Classify various methods on restrictions of turning movements.	BT-5	Evaluating
12.	Identify the need for proper signaling?	BT-3	Applying
13.	Explain What is meant by tidal flow operation in Traffic Management?	BT-3	Applying
14.	Explain when would you suggest Reversible Lanes?	BT-4	Analyzing
15.	Identify the Condition for tidal flow operation.	BT-4	Analyzing
16.	Examine the purpose of one - way streets.	BT-1	Remembering
17.	List the disadvantages of one - way streets.	BT-2	Understanding
18.	What is known as congestion pricing?	BT-5	Evaluating
19.	List the requirements of good pricing system.	BT-2	Understanding
20.	Justify the conditions for prohibiting right turn movement?	BT-3	Applying
21.	What is Aggregate and Disaggregate Models in Traffic Forecasting?	BT-6	Creating
22.	Write the importance of Traffic management.	BT-2	Understanding
23.	Compile the problems posed by turning traffic?	BT-6	Creating
24.	Define Traffic segregation & what for it is done.	BT-3	Applying
25.	Discuss the Scope of traffic management.	BT-5	Evaluating

**PART – B**

1.	Write short notes on few of the traffic management measures: Tidal flow operation, Exclusive bus lane and Restriction on turning movement	BT-1	Remembering
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2.	Write briefly on the following: Locations where parking is prohibited and Peripheral parking schemes	BT-5	Evaluating
3.	Describe the strategies adopted to avoid right turning at intersections.	BT-6	Creating
4.	Write in detail about Traffic congestion studies, Effect of traffic congestion	BT-2	Understanding
5.	Explain what is the significance of traffic management? Write the various travel demand management techniques commonly used in managing traffic on roads.	BT-2	Understanding
6.	Discuss in detail the various methods of traffic regulatory measures in traffic management.	BT-1	Remembering
7.	Explain about Intelligent Transport system for traffic management	BT-3	Applying
8.	Explain in detail about Traffic System Management (TSM)	BT-5	Evaluating
9.	Explain briefly on the following: Speed breakers, Rumble strips	BT-4	Analyzing
10.	Illustrate the applications of ITS with reference to Indian conditions	BT-4	Analyzing
11.	List any two methods of forecasting traffic conditions for peri-urban area.	BT-5	Evaluating
12.	Illustrate briefly when road and how road pricing could be adopted for urban areas	BT-3	Applying
13.	Sketch with conflicts points for pedestrians and vehicles and explain them	BT-4	Analyzing
14.	Elaborate the advantages & Disadvantages of one-way streets.	BT-6	Creating
	How the promotion and integration of public transport can be done?		
	Explain in detail about the different types of Traffic Demand Management Techniques		
	Explain in brief the significance of promotion and integration of Mass/Public transportation in urban areas in specific.		

### BT – ALLOTMENT

S.No	Unit No.		BT1	BT2	BT3	BT4	BT5	BT6	Total Question
1	Unit-1	Part-A	6	5	4	4	3	3	25
		Part-B	4	3	2	3	1	1	14
		Part-B	4	3	2	3	1	1	14
		Part-C	-	-	1	1	1	1	4
3	Unit-3	Part-A	6	5	4	4	3	3	25
		Part-B	4	3	2	3	1	1	14

<b>4</b>	<b>Unit-4</b>	Part-A	6	5	4	4	3	3	25
		Part-B	4	3	2	3	1	1	14
<b>5</b>	<b>Unit-5</b>	Part-A	6	5	4	4	3	3	25
		Part-B	4	3	2	3	1	1	14

### TOTAL NUMBER OF QUESTIONS

PART-A	125
PART-B	70
PART-C	20
TOTAL	215

