



MODEL ANSWER

SUMMER- 17 EXAMINATION

Subject Title: Transport Management and Motor Industry

Subject Code:

17616

Important Instructions to examiners:

- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills).
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and model answer.
- 6) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
- 7) For programming language papers, credit may be given to any other program based on equivalent concept.

Q. No .	Su b Q. N.	Answer	Markin g Scheme
1.	(A)	Attempt any THREE of the following:	12
		(a) Define the terms: (i) Goods Vehicle (ii) Conductor (iii)Stage Carriage (iv) Fare	04
		(a) Define the terms: (1 mark each) (i) Goods Vehicle - It means any motor vehicle constructed or adopted to use upon the road solely for carriage of the goods. Such vehicle can be used on contract or under hire purchase agreement. (ii) Conductor - In relation to stage carriage Conductor is a person engaged in collecting fares from Passengers, regulating their entrance into or exit from, the stage carriage and performing such other functions as may be prescribed. (iii) Stage Carriage - It means a motor vehicle constructed or adopted to carry more than six passengers excluding the driver for hire or reward at separate fares paid by or for individual passengers, either for the whole journey or for the stage of the journey. (iv) Fare - It means the sum payable for a daily or seasonal ticket in respect of the hire of a contract or Stage carriage.	04



(b) What is Driving License? State documents required to obtain it.

04

(Explanation 02 marks) Answer: Driving License - It means the license issued by a competent authority authorizing the person specified therein to drive, otherwise than as learner, a motor vehicle or a motor vehicle of any specified class or description. No person shall drive a motor vehicle in any public place unless he holds an effective driving license issued to him authorizing him to drive the vehicle.

It is issued in form no. 6 or Form No.7 (Smart Card)

Documents required to obtain driving license –

(Any 4 documents, each document carry ½ mark)

- i) Application in form no 4
- ii) Effective learner's license.
- iii) Proof of age and address.
- iv) Medical certificate in form no. 1.
- v) Three copies of recent passport size photographs.
- vi) Driving school's certificate in form no.5 for all transport vehicles.
- vii) Appropriate fees.
- viii) All valid documents of the vehicle on which the test to be conducted.

04

(c) Give any four types of forms used in MVA. State its purpose.(any four- 1 mark each)

04

Sr. No	Form no	Use/Purpose
01	Form 1	Application cum declaration of physical fitness
02	Form 1 A	Medical certificate
03	Form 2	Application for the grant or renewal of learners license
04	Form 3	Learner's license
05	Form 4	Form of application for license to drive a motor vehicle
06	Form 5	Driving certificate issued by driving school or establishment
07	Form 6	Form of driving license(Ordinary type)
08	Form 7	Form of driving license (Smart Card type)
09	Form 8	Application for the addition of new class of vehicle to a driving license
10	Form 9	Form of application of renewal driving license
11	Form 10	Starter register of driving license
12	Form 11	Form of license for the establishment of new driving school
13	Form 12	Form of application to engage in the business of importing instructions in the driving of motor vehicle
14	Form 13	Form of application for renewing la license to engage in the business of importing instructions in the driving of motor vehicles
15	Form 14.	Register showing the enrolment of the trainees in the driving school establishment
16	Form 15	Register showing the driving hours spend in the a trainees
17	Form 16	Form of application a renewal of trade certificate
18	Form 17	Form of trade certificate
19	Form 18	Intimation of loss or destruction of a trade certificate an application for duplicate
20	Form 19	Register to be maintained by the holder of trade certificate
21	Form 20	Form of application for registration of motor vehicles
22	Form 21	Sale certificate

04



		23	Form 23	Form of certificate of registration			
		24	Form 28	NOC in case vehicle coming from other region or from other state			
		25	Form 29	Declaration of seller			
		26	Form 30	Declaration of purchaser			
		27	Form 31	Application for the transfer of ownership in the name of person succeeding to the possession of the vehicle			
		(d) State any four objectives of taxation.					04
		Answer: Objectives of taxation: (Any four objectives – 1 mark each) 1. Raising the revenue of government. 2. Economical growth of state and nation. 3. Reduction in unemployment. 4. Reduction in regional disparities. 5. Distributional justice to all the people.					04
1	(B)	Attempt any ONE of the following:					06
		(a) State the situations in which ownership of motor vehicle is transferred. Write the procedure for transfer of ownership in any one situation.					06
		Answer(Situations – 2marks, Procedure of any one situation – 4marks) Situations in which ownership of motor vehicle is transferred are – 1. On death of owner of the vehicle, 2. On sell/purchase of the vehicle, 3. Purchased in public auction, 4. Registration in the name of financier on default of registered owner. (I). Procedure for the transfer of ownership on death of owner of the vehicle: 1. When the owner of a motor vehicle dies, the person succeeding to the possession of the vehicle may inform the registering authority about occurrence of the death of the owner and of his own intention to use the vehicle 2. Time Limit -within thirty days of the death of the owner. 3. Successor can use the vehicle for a period of three months 4. Documents Required-i. Form 31 - Application for the transfer of ownership in the name of person succeeding to the possession of the vehicle. ii. Form 30 TCA / TCR – iii. The death certificate in relation to the registered owner; iv. Succession certificate v. Affidavit from the successor vi. Address proof vii. All valid documents of the vehicle (PUC certificate, Insurance region/state certificate, Registration Certificate, Tax Certificate etc.) viii. The appropriate fee (Half of the fee for Registration) (II) Procedure for the transfer of ownership on Sell and delivered the vehicle to other person: 1. The purchaser of the vehicle may inform the registering authority about notice of Transfer of Ownership on purchase. 2. Time Limit - <input type="checkbox"/> Within the same office area- 14 days <input type="checkbox"/> In the jurisdiction of other authority- 30 days 3. Documents Required					06



- i. Form 29 - Declaration of seller.
- ii. Form 30 -Declaration of purchaser.
- iii. Form 28 –NOC in case vehicle coming from other region or from other state
- iv. Address proof
- v. Income tax declaration from seller & purchaser in form 60 (except 2 wheelers)
- vi. All valid documents of the vehicle (PUC certificate, Insurance region/state certificate, Registration Certificate, Tax Certificate etc.)
- vii. Prescribed fees (Half of the fee for Registration)

(III) Procedure for the transfer of ownership of vehicle purchased in public auction:

1. The person who has purchased a motor vehicle at a public auction conducted by the Central / State Government shall make an application in Form 32 of taking possession of the vehicle to the registering authority accompanied by necessary documents.
2. Time Limit - within thirty days
3. Documents Required –
 - i. Form 32 - application of purchased a motor vehicle.
 - ii. Form 30 - Declaration of purchaser.
 - iii. Form 28 - NOC in case vehicle coming from other region or from other state
 - iv. The certified copy of the order of the Central or State Government authorizing the auction of the vehicle.
 - v. Order / sale certificate of the vehicle in purchaser's favour duly signed by the person authorized to conduct the auction,
 - vi. Address proof
 - vii. All valid documents of the vehicle (PUC certificate, Insurance region/state certificate, Registration Certificate, Tax Certificate etc.)
 - viii. Prescribed fees (Half of the fee for Registration)

(IV) Procedure for the transfer of ownership of vehicle in the name of financier:

1. In case of hire-purchase, lease or hypothecation agreement; if the registered owner becomes Defaulter, the financier can apply for the transfer of ownership in his own name. He should satisfy the registering authority that he has taken possession of vehicle from the defaulter owner.
2. Documents to be submitted – Application in form no. 30 and 36, appropriate fees.
3. The registering authority after receiving such application gives an opportunity to defaulter owner to make any representation by sending him a notice.
4. After verifying the documents and particulars authority may cancel the previous RC and issue the new one in the name of financier.

b) Describe tapered scale or telescopic method used in MSRTC to decide fare.

06

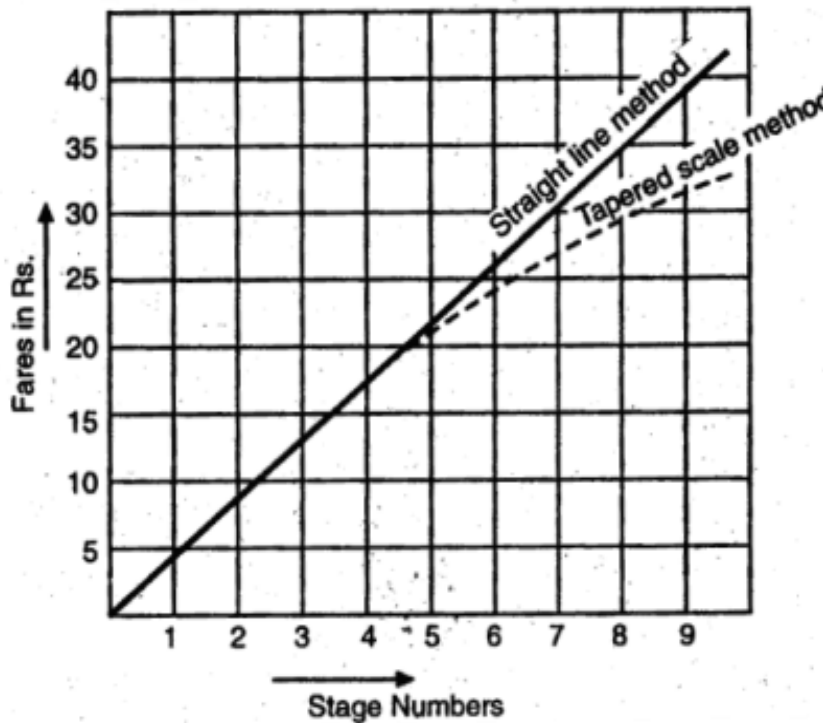
Answer: Telescopic or Tapered scale method:

Tapered scale of fare provides a decreasing rate of charge as the distance traveled increases. Normally in this fare method, the first few kilometers would have a straight line type of fare which would then progressively taper off. Suppose, the fare rate is Rs.1/- per kilometer then the fare for 5 kilometer may be Rupees 5/- and any journey within this 5 kilometers will be charged Rupees.5/- . This is known as minimum fare. After 5 kilometers the fare rate may decrease proportionately. For instance, the fare for 15 kilometers may be fixed as Rupees.13/- instead of Rupees.15/-.

04



It means that long distance travelling passengers will get benefit as compare to short distance travelling passengers.



02

2 Attempt any FOUR of the following:

16

(a) Write suspension or cancellation of driving licensing in certain cases.

04

(Any 04 cases- 1 mark each)

Answer: Suspension or cancellation of driving license in certain cases.

The driving license may be suspended or cancelled if the holder of license

1. Is habitual criminal or habitual drunkard
2. Is required or committed a certain offence
3. If the conduct of driver is likely cause danger to the general public
4. If he is theft of the motor vehicle or theft of goods carried in goods carriage
5. If he transports goods prohibited under any law
6. Carries overload in goods carriage
7. Driving with excessive speed
8. Misbehavior with authority
9. Carrying person in goods carriage
10. Failed to stop when signal to do so by any person authorized to do so
11. Smoking while driving public service vehicle

04



(b)	Write the general provision regarding construction and maintenance of motor vehicle.	04
	<p>General provisions regarding construction and maintenance of motor vehicle: (Any 4 points, each point carry 1 mark) The Central government may make rules regulating the construction, equipment and maintenance of motor vehicles and trailers to all or any of the following matters namely,</p> <ol style="list-style-type: none">The width, height, length and overhang of vehicles and of the load carried,The size, nature and condition of tyres,Brakes and steering gear,Signaling appliances, lamps and reflectorsSpeed governorsThe emission of smoke, visible vapours, sparks, ashes, girt or oil,The reduction of noise caused by vehicles,The embossment of chassis number and engine number and the date of manufacturing.Safety belts, handle bars of motor cycles, auto-dippers and other equipment essential for safety of driver, passengers and other road usersStandards of the components used in the vehicle as inbuilt safety devicesProvision of transportation of goods of dangerous or hazardous nature to human lifeStandard for emission of air pollutants	04
(c)	State various types of booking used in transport management.	04
	<p>(Any 4 points- 1 mark each) Answer: Following types of booking used in transport management.</p> <ol style="list-style-type: none">To Pay at Destination: In this type of booking the party has to pay the cash and take delivery.Paid: In this type, party to pay the freight charges in advance.Billing: In this type, party has to pay the charges on submission of bills. There are five copies of a goods consignment notes for consignee copy, consigner copy, driver's copy, head office copy for accounts and office copy.Online Payment: Payment through Internet banking in advance or after the delivery of Consignment.	04
(d)	Which vehicles are exempted from permit? Why?	04
	<p>Answer: Vehicles exempted from Permit: (Any four – 1 mark each)</p> <ol style="list-style-type: none">Any transport Vehicles own by central or state government, & used for government purposes. It should not be connected with any commercial enterprise.Any transport vehicle used for government purpose by order.Any transport vehicle own by local authorities or by a person under contract with a local authority and used for purposes like road cleaning, road watering, and for construction of roads.Any transport vehicle solely used for police, fire brigade and medical purposes.Any transport vehicle used for towing breakdown vehicles or used for removing goods from breakdown vehicles to the place of safety.Any transport vehicle used for the purpose of any educational institutes which is recognized by state government or central government.Any transport vehicle used by a person who manufactures or deals in motor vehicles or builds bodies for attachment to the chassis and solely for the purpose in accordance with the condition in the act.Any goods vehicle whose gross vehicle weight does not exceed 300 Kg.Any transport vehicle used for the social purposes such as at the time of flood, earthquakes and for any natural calamities. .Any transport vehicle proceeding empty for registration.Any transport vehicle proceeding empty for major repairs	04



		12) Any transport vehicle which is subjected to hire purchase agreement and on default of the owner has taken possession by the person or any financial organization whose name is entered in such an agreement & that vehicle is made to reach its destination																												
	(e)	Differentiate between STA and RTA claiming vehicle.(Any four - 1 mark each)	04																											
		<table border="1"><thead><tr><th>Sr.No</th><th>STA</th><th>RTA</th></tr></thead><tbody><tr><td>1</td><td>It is the State Transport Authority</td><td>It is the Regional Transport Authority</td></tr><tr><td>2</td><td>STA give effect to the directives issued under section 67 to control road transport by state Government throughout the state.</td><td>RTA decides the policies to control road Transport as per the directives of STA Throughout the region.</td></tr><tr><td>3</td><td>To co-ordinate and regulate the activities and policies of the Regional Transport Authorities</td><td>To fix the fares for the auto-rickshaws, taxies etc. from time to time throughout the region</td></tr><tr><td>4</td><td>To conduct not less than two meetings in a year</td><td>To conduct not less than six meetings in a year and do the business regarding control of road transport</td></tr><tr><td>5</td><td>Chairman- Transport secretary</td><td>Chairman- Divisional/Revenue Commissioner</td></tr><tr><td>6</td><td>Members- I.G.(Police), Chief Engineer of PWD, Few MLA's and Two non-government Representatives</td><td>Members- Deputy I.G.(Police), Superintending Engineer of PWD, Few MLA's and One non-government representative</td></tr><tr><td>7</td><td>Secretary – Transport commissioner or Joint transport commissioner</td><td>Secretary – Regional transport officer</td></tr><tr><td>8</td><td>To consider applications for grant, renewal, and transfer of permit on interstate routes</td><td>To consider applications for grant and renewal of license and permit within the region</td></tr></tbody></table>	Sr.No	STA	RTA	1	It is the State Transport Authority	It is the Regional Transport Authority	2	STA give effect to the directives issued under section 67 to control road transport by state Government throughout the state.	RTA decides the policies to control road Transport as per the directives of STA Throughout the region.	3	To co-ordinate and regulate the activities and policies of the Regional Transport Authorities	To fix the fares for the auto-rickshaws, taxies etc. from time to time throughout the region	4	To conduct not less than two meetings in a year	To conduct not less than six meetings in a year and do the business regarding control of road transport	5	Chairman- Transport secretary	Chairman- Divisional/Revenue Commissioner	6	Members- I.G.(Police), Chief Engineer of PWD, Few MLA's and Two non-government Representatives	Members- Deputy I.G.(Police), Superintending Engineer of PWD, Few MLA's and One non-government representative	7	Secretary – Transport commissioner or Joint transport commissioner	Secretary – Regional transport officer	8	To consider applications for grant, renewal, and transfer of permit on interstate routes	To consider applications for grant and renewal of license and permit within the region	04
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	(f)	State the elements considered for site selection for a bus depot.(Any 04 points- 1 mark each)	04																											
		<ol style="list-style-type: none">1. To reduce the dead Km bus Depot should be nearer to the bus station.2. It should not be much away from city, town, or village.3. It should have facilities like water, electricity, telephone, post office etc.4. It should be free from fear of flood, water logging.5. HT lines should not pass over the site.6. Communication facilities should be within reach.7. It is necessary to know the condition of soil because foundation cost increases in case of bad soil.8. Availability of sufficient land.9. If the site is near National Highway, it should be away by 100 feet from the Highway.	04																											
3		Attempt any FOUR of the following :	16																											
	(a)	Write the factors considered for valuation of vehicle.(Any four- 1 mark each)	04																											
		Answer: The process of determining the current worth (value) of a vehicle is called as valuation. There are many techniques that can be used to determine value, such as subjective and objective. Following are the factors considered for valuation of vehicle – <ol style="list-style-type: none">1. Know the current market value of vehicle2. Calculate the depreciation of vehicle based on market value. for this consider –																												



	<p>i) Make, Model and Variant E.g. Make – Maruti-Suzuki, Model - Swift Variant - VDi ii) Month and Year of Manufacture e.g. June 2012 iii) The city in which the car was registered. 3. Calculate the depreciation of vehicle based on usage and aging. 4. Analyze the mechanical condition and damage occurred with respect to Body, Chassis, and aesthetics, Engine condition, vibrations, noise etc. 5. Consider the Tyre condition and decide tyre cost. 6. Kilometers driven – this can be find out from the odometer on the dashboard.</p>	04																																																
(b)	<p>Define the terms: (i) Public place (ii) Vehicle Schedule (iii) Time Table iv) Route(1 mark each)</p>	04																																																
	<p>(i) Public place: It means a road, street, way or other place, whether a thoroughfare or not, to which the public have a right of access, and includes any place or stand at which passengers are picked up or set down by a stage carriage.</p> <p>(ii) Vehicle Schedule: The detailed plan of arrival and departure of buses to be operated by the depots known as vehicle schedule. Or It is a trip or trips assigned to be performed by a bus during a day.</p> <p>(iii) Time Table: The schedule or detailed plan of arrival and departure of buses to be operated by the depot is known as time table.</p> <p>iv) Route: t means line of travel of the specific way in between two terminals on which the motor vehicle may be operated</p>	04																																																
(c)	<p>Calculate number of buses required for transport operation between terminals A& B and prepare a bus schedule for data given below-</p> <p>(i) Distance between A & B is 100 km (ii) Buses are operated through the day between 6.00 a.m. to 8.00 p.m. with frequency of 1 Hr. (iii) Running time is 3 Hrs. and standing time is 1 Hr.</p>	04																																																
	<p>Answer:</p> <p>Number of buses required = $\frac{\text{Running time(Twice)+ Stand Time (Twice)}}{\text{No of Frequency}}$</p> <p>Number of buses required = $\frac{(3*2) + (1*2)}{01} = 08$</p> <table border="1"> <thead> <tr> <th colspan="3">First Bus</th> <th colspan="3">Second Bus</th> </tr> <tr> <th></th> <th>Station</th> <th>Time</th> <th></th> <th>Station</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>Departure</td> <td>A</td> <td>6 am</td> <td>Departure</td> <td>B</td> <td>6 am</td> </tr> <tr> <td>Arrival</td> <td>B</td> <td>9 am</td> <td>Arrival</td> <td>A</td> <td>9 am</td> </tr> <tr> <td>Departure</td> <td>B</td> <td>10 am</td> <td>Departure</td> <td>A</td> <td>10 am</td> </tr> <tr> <td>Arrival</td> <td>A</td> <td>1 pm</td> <td>Arrival</td> <td>B</td> <td>1 pm</td> </tr> <tr> <td>Departure</td> <td>A</td> <td>2 pm</td> <td>Departure</td> <td>B</td> <td>2 pm</td> </tr> <tr> <td>Arrival</td> <td>B</td> <td>5 pm</td> <td>Arrival</td> <td>A</td> <td>5 pm</td> </tr> </tbody> </table>	First Bus			Second Bus				Station	Time		Station	Time	Departure	A	6 am	Departure	B	6 am	Arrival	B	9 am	Arrival	A	9 am	Departure	B	10 am	Departure	A	10 am	Arrival	A	1 pm	Arrival	B	1 pm	Departure	A	2 pm	Departure	B	2 pm	Arrival	B	5 pm	Arrival	A	5 pm	02
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Third Bus			Fourth Bus		
	Station	Time		Station	Time
Departure	A	7 am	Departure	B	7 am
Arrival	B	10 am	Arrival	A	10 am
Departure	B	11 am	Departure	A	11 am
Arrival	A	2 pm	Arrival	B	2 pm
Departure	A	3 pm	Departure	B	3 pm
Arrival	B	6 pm	Arrival	A	6 pm

Fifth Bus			Sixth Bus		
	Station	Time		Station	Time
Departure	A	8 am	Departure	B	8 am
Arrival	B	11 am	Arrival	A	11 am
Departure	B	12 am	Departure	A	12 am
Arrival	A	3 pm	Arrival	B	3 pm
Departure	A	4 pm	Departure	B	4 pm
Arrival	B	7 pm	Arrival	A	7 pm

Seventh Bus			Eighth Bus		
	Station	Time		Station	Time
Departure	A	9 am	Departure	B	9 am
Arrival	B	12 am	Arrival	A	12 am
Departure	B	1 am	Departure	A	1 am
Arrival	A	4 pm	Arrival	B	4 pm
Departure	A	5 pm	Departure	B	5 pm
Arrival	B	8 pm	Arrival	A	8 pm

(d) State the passenger amenities and infra-structural facilities required. 04

**Answer: Following amenities and infrastructural facilities are to be provided in a depot:
(Any 8 points- each point carry ½ Mark)**

1. Internal parking and External parking Regularly in-service buses stored in the interior of the garage, with less used or older service vehicles, and vehicles awaiting disposal are stored externally
2. Fueling point
3. Fuel storage tanks
4. Engineering section - Smaller depot garages may contain the minimum engineering facilities, limited to light servicing facilities
5. Inspection pits
6. Bus washing bay
7. Brake test lane
8. Staff canteen/rest room
9. Several bus depots are supplemented by a central works facility
10. Garages may also contain recovery vehicles to recover break-downs vehicles
11. Overhead tank for adequate water supply
12. Adequate Electricity facility
13. Central Store

04

(e) Write the procedure to hire a truck for transport management. 04

Answer: Procedure to hire a truck for transport operation:

1. From booking office obtain the stock of goods to be lifted to various destinations.



		<p>2. Analysis the crossing / transshipment points through which consignments are to be dispatched.</p> <p>3. Analysis the possibilities of adjustments in loading calculate the number of vehicle required for hire etc.</p> <p>4. Contact approved truck suppliers for each destination for the availability of truck and rates contact at least five suppliers.</p> <p>5. Record their name and rates in register.</p> <p>6. Obtain from other transport companies the rates at which they hire out the trucks and cross checks the rates of the suppliers.</p> <p>7. Choose that truck supplier whose services are prompt and whose rates are competitive and economical.</p> <p>8. Decide about the terms and conditions for transport of goods-</p> <p>i. Speed: The goods should be transported within the shortest possible time.</p> <p>ii. Safety: The Physical damage to goods must be prevented by careful handling. The safety of the goods gives the customer faith in the organization.</p> <p>iii. Capacity: An efficient transport system must have an adequate capacity for all sorts of demands.</p> <p>iv. Frequency: The frequency of a service is related to speed and capacity.</p> <p>v. Regularity: Regularity of operation is obtained when the frequency of operation is evenly spread.</p> <p>vi. Responsibility: The transport operator must take the responsibility of safe transport of consignment, should compensate for the loss or damage to the goods, if any when the goods are in his custody</p>	04
4	(A)	Attempt any THREE of the following:	12
		(a) Describe how will you prepare for selling your old vehicle?	04
		<p>1. Give vehicle "Curb Appeal": When people come to buy car, they will probably make up their minds to buy it or not within the first few seconds. This is based on their first look at the car. So car should have "Curb Appeal".</p> <p>2. Before you advertise your car for sale, make sure it looks clean and attractive:</p> <p>1) Wash and vacuum the car.</p> <p>2) Make sure that vehicle is free from abnormal sounds, dents, scratches.</p> <p>3) If necessary, make low cost repair or replacement of parts.</p> <p>4) Wipe the brake dust off the wheel covers and treat the tyres with a tyre gloss product.</p> <p>5) Thoroughly clean the windows (inside and out) and all the mirrored surfaces.</p> <p>6) Wipe down the dashboard and empty the ashtrays.</p> <p>7) Keep all maintenance records ready to show prospective buyers.</p> <p>8) If necessary, do the servicing.</p> <p>3. Documentation: Following documents are required while selling the vehicle -</p> <p>i) Registration certificate</p> <p>ii) Tax certificate</p> <p>iii) Insurance certificate</p> <p>iv) PUC certificate</p> <p>v) NOC certificate</p> <p>4. Set your vehicle price: Keep the written estimate of repair on damage if any before selling. Take a copy of service record from the dealer to assure that the vehicle is maintained properly. Set the price of vehicle that will be best negotiable</p>	04



	(b) Write the steps involved in accident survey report	04
	<p>Answer: Steps involved in preparation of accident survey report: Whenever an accident occurs all particulars have to be collected for purpose of preparing a report known as accident survey report. While applying for insurance claim to insurance company when the vehicle is met to an accident or damaged due to any natural calamity, an Accident survey report is required to be attached with application form. It is prepared by the surveyor appointed by the insurance company.</p> <p>1) Whenever an accident occurs all particulars have to be collected and ascertained as given below-</p> <p>a) General: Site, date and time of accident b) Registration no. of vehicle involved in accident c) Nature of Accidents - Collision with or avoidance of overturning or any other kind of accident.</p> <p>d) Primary Cause of accident - Fault of driver or pedestrian, defective road surface, other cause, unknown. e) Light condition- Daylight, dusk, dark with good street light, dark with no street light. f) Road condition- Straight, bend, intersection, flat, dry, wet, hill, concrete, earth road. g) Traffic condition- Dense/light/moderate traffic, controlled junction, uncontrolled junction. h) Responsibility of driver- Sex, age, driving experience, intoxicated, asleep or inattentive, Speeding. i) Responsibility of Pedestrian- Age, deaf, blind or otherwise walking on road, crossing or Running into road, intoxicated, confused by traffic, talking in roadways. j) Particulars of motor vehicle- Age of vehicle, overload, and defective brakes, defective steering, puncture or burst, other serious mechanical defects. k) Casualties persons killed/ injured- Rider of motorcycle, passengers other than driver or rider, cyclist, pedestrian, not known.</p> <p>2) Assess the quantum of loss. 3) Determine the liability of the insurers within the framework of policy conditions. 4) Negotiate with the insurer/advise the insurers regarding the disposal of salvage. 5) Prepare the detail survey report and submit it to the insurer.</p>	04
	(c) How warranty system is useful in case of an accident?	04
	<p>Useful of warranty system: (Any 4 points)</p> <p>1) In warranty system Defective parts are replaced. 2) In warranty system the defective parts are repaired in stipulated time. 3) The cost is not charged from the customer. 4) These expenses of repairs are born by the manufacturer. 5) Sometimes with the understanding of parent company the warranty claims are offered to their customers even after expiry of warranty period.</p>	04
	(d) What is the role of PCRA in automobile industry?	04
	<p>Answer: Objectives of Petroleum Conservation Research Association (PCRA): (Any four)</p> <p>1) To formulate strategies and promote measures for accelerating conservation of petroleum</p>	



- products.
- 2) To create awareness among masses about the importance, benefits and methods of conserving petroleum products and clean environment by enhancing information and capacity building.
 - 3) To promote research, development and deployment efforts aimed at petroleum adoption and dissemination of fuel efficient technologies and substitution of petroleum products with alternate fields and renewable.
 - 4) To establish synergetic institutional linkages at the national and international levels in the areas of petroleum conservation and environment protection.
 - 5) To provide training and technical advisory services, designed to achieve economy and efficiency in use of petroleum products for cleaner environment.
 - 6) To function as a “Think Tank” to the Government of India for proposing policies and strategies on petroleum conservation and environment protection aimed at reducing excessive dependence on oil.

04

4 (B) Attempt any ONE of the following:

06

(a) What is registration mark? Give form and manner in which registration mark is displayed for- 1) Motor cycle 2) Transport vehicle

06

Answer: Registration mark: When vehicle is registered under Motor Vehicle Act, then a registering authority assigns a registration mark (Registration Number on number plate) to the vehicle. The owner of the vehicle is required to get painted the registration mark and affix to the vehicle as specified in motor vehicle act. The registration mark is issued by the registering authority will be valid throughout the India.

02

Form and manner for display of registration mark:

1. Motor cycle: The registration mark should be affixed on the front and rear side of the vehicle.
2. Transport vehicle: The registration mark should be affixed on the front, rear as well as left and right side of the vehicle.

No.	Parameter	Motor cycle	Transport vehicle
1	Background colour	White	Yellow
2	Colours of letters and numerals	Black	Black
3	Minimum height of letters	3.5 cm	6.5 cm
4	Minimum thickness of letters	0.7 cm	1.5 cm
5	Minimum height of numerals	4.0 cm	9.0 cm
6	Minimum thickness of numerals	0.7 cm	2.0 cm
7	Minimum space between letters or numerals	0.5 cm	1.5 cm

04

(b) Describe basic elements in transport management.

06

Answer: Basic elements in transport management

1. Market potential:

It includes - Type of goods/ passengers, Period of use, Probable competition





- 2.** Selection of vehicle: It depends upon Type of load, Class of passenger, Type of service.
- a. Depending upon load to be carried, road conditions, working conditions, type of goods to be carried etc. the appropriate vehicle to be selected. i.e. If a vehicle is to be selected of transporting large loads, the choice will be for high powered vehicles.
- b. The selection of chassis length mainly depends upon the load to be carried and road conditions. MSRTC has preferred the buses with short length of chassis to run in Konkan region: because the roads in that region are narrow and most of the Konkan region consist of ghat section hence to take the turn, the buses with short chassis are preferable than ordinary buses.
- 3.** Organization setup: Govt., Semi Govt., Private.
- 4.** Legal compliance: Documents required as per MVA like
- a. Registration certificate
- b. Tax certificates
- c. Insurance certificate
- d. PUC certificate
- e. Permits etc
- 5.** Policies of transport organization: Policies towards passengers and employees.
- a.** Policies towards passenger:-
1. Luxury service,
2. Concession Pass for students and senior citizen,
3. Express service on special route,
4. Night service on special route,
5. Vehicles for Special private Tours/Yatras/functions/ Educational tours on public demand,
- b.** Policies toward employees –
1. Bonus for employees – Bonus is compensation for the work that the employee has performed in addition to the employee’s regular salary or wages for motivational purpose.
2. Overtime Allowances – Overtime allowance is admissible for work done in excess of one hour of the prescribed hours of work on any working day and includes work done on Sundays or any other holidays
3. Health insurance: To provide the health insurance to the employee and his family to maintain healthy working atmosphere.
4. Free Travel packages: The state transport undertaking like MSRTC provides such packages to their employees and their family for specific period per year.
5. Employee Training: Transport organizations provide training to employees to upgrade their

06



	skills as per need.	
5	Attempt any FOUR of the following:	16
	(a) What factors are to be considered while buying a new motor vehicle?	04
	<p>Answer: following factors for buying new vehicle: (Any 4 points -1 mark each)</p> <p>a) Features and quality of new vehicle: Checkout the features offered and additional optional fittings, which suits your lifestyle. Checkout the quality factors of new vehicle like mileage, fuel storage capacity, option of using alternative fuels like CNG/LPG, also safety features like airbags, antilock braking system etc.</p> <p>b) Ex-showroom price and on road price: There is huge difference between on-road price and ex-showroom price. Ex-showroom price is the basic price which does not include Insurance, RTO registration charges, extended warranty if any and sometimes the Municipality Road tax etc. After adding all these you will get on road price.</p> <p>c) Use of vehicle: Select the vehicle on basis of for what purpose you are buying a new vehicle (Personal use, Commercial use, expected seating capacity etc.)</p> <p>d) Inspecting the vehicle: Before purchasing the vehicle inspect the vehicle for whether the features are as per your demands or not.</p> <p>e) Gather expert reviews: Read expert comments and reviews on the vehicle, you are buying. Do the comparative study with other same class of vehicles to checkout for added benefits. Enquire about extended warranty as well as regular service contract.</p> <p>f) Test drive the vehicle: Analyze and be sure that the vehicle has characteristics that you are looking for. Inspect and feel carefully all the interior and exterior such as bonnet, of vehicle. Checkout your vehicle thoroughly including braking, electrical, steering system etc before driving at home.</p> <p>g) When and where to buy: Vehicles prices hike up and down often, Ex- Showroom price & tax applicable can also varied as per location hence it's important to decide when and where to buy a vehicle.</p> <p>h) Closing the deal: Vehicles prices hike up and down often, so negotiate the price of the vehicle. Remember the Actual price of the car may be far less than the Advertised price so bargain as much as possible.</p>	04
	(b) How a navigation system is useful in controlling the traffic?	04
	<p>Answer: Importance of vehicle navigation system are (any 04 points, 01 mark each)</p> <p>1. To locate vehicle –A vehicle tracking system enables the fleet operator to find out the location of the vehicle Throughout the journey of the vehicle, against time. Most transporters use GPS to locate their vehicle.</p> <p>2.Fleet Management -GPS vehicle tracking system also helps the fleet owners to see the vehicle's current data like its mileage, speed, engine capacity, direction of travel etc. for the fleet owners to manage their fleets and improve their business strategies</p> <p>3. Vehicle Security-Vehicle tracking system can be used to protect their vehicles from theft. The system shows the location of the vehicle and hence helps to recover your stolen vehicle. It is even possible to stop the vehicle's engine remotely</p>	04



	<p>4. Teens Safety -Vehicle Tracking System can also be used by the parents to ensure the safety of their teen-agers driving the vehicle. System gives you the report of where the vehicle went, its speed, how long it stopped and etc</p> <p>5. School Buses -Vehicle Tracking System proves beneficial for schools to track the bus locations. This system will be helpful to keep an eye on the movement of school buses.</p> <p>6. Apart from utilizing the data generated by the vehicle tracking system for enforcing the schedule of the bus, this data also provides important inputs for decision making.</p> <p>7. The system facilitates computation of exact distance travelled in a given time span, computation of the speed of the bus at a given location, analysis of the time taken by the bus to cover certain distance.</p> <p>8. It becomes a very powerful tool in case the Transport Corporations are hiring private buses, as computation of the distance travelled, based on which payments are made becomes totally objective.</p>	
	(c) State any four advantages smart card.	04
	<p>Answer: Following are the advantages smart card (any 04 advantages, 01 mark each)</p> <ol style="list-style-type: none"> 1. The Smart-card driving license is electronically issued driving license. 2. The Smart-card driving license is Tamper-proof. 3. The Smart-card driving license is of a plastic card embedded with a microprocessor chip having 64KB memory. 4. All details about the driving license holder (photograph, thumb impression, signature) are recorded on the computerized database and chip. 5. One of the major benefits of Smart-card driving license is cutting down of time required in issuing a driving license. 6. The applicants visiting the RTO office with forms and documents may get the new driving license on the same day. 7. Driving license database is created and different reports are available. 8. Easy to carry in pocket. 9. Smart card is durable. 	04
	(d) Draw traffic signs for: i. No Entry ii. Compulsory turn left.	04
	<p>i. No entry- (any one sign) ii. Compulsory turn left. (02 marks each)</p> <div style="text-align: center;">   </div>	04
	(e) List two advanced traffic devices and state their importance.	04
	<p>Answer: Advanced Traffic Control Devices: (Any two- 2 marks each with importance)</p> <ol style="list-style-type: none"> 1. Traffic camera: A traffic enforcement camera system, consisting of a camera and a vehicle-monitoring device, is used to detect and identify vehicles disobeying a speed limit or some other road legal requirement. 2. Ramp meter: A ramp meter, ramp signal or metering light is a device, usually a basic traffic light or a two-section signal (red and green only, no yellow) light together with a signal controller that regulates the flow of traffic entering freeways according to current traffic 	



	<p>conditions.</p> <p>3. Highway advisory radio: The Highway Advisory Radio System (HARS) is a low power radio station designed to provide current information to motorists about local road conditions, closures, and delays. Motorists could obtain HAR information by tuning their FM car radios to a predefined frequency.</p> <p>4. Roadside traffic sensors: These sensors send available traffic information to develop optimal traffic control strategies addressing traffic needs at a single intersection, along an arterial or freeway, along a given corridor, or throughout a given area to the advance traffic management system.</p> <p>5. Variable speed limits: Variable speed limits that change with road congestion and other factors</p> <p>6. Smart card: Smart cards can provide identity documentation, authentication, data storage, and application processing. Smart cards may provide strong security authentication for single sign-on (SSO) within large organizations.</p> <p>7. Bluetooth- Bluetooth is a wireless standard used to communicate between electronic devices like mobile phones, smart phones, headsets, navigation systems, computers etc. Bluetooth road sensors are able to detect Bluetooth MAC addresses from Bluetooth devices in passing vehicles. If these sensors are interconnected they are able to calculate travel time and provide data for origin and destination matrices</p> <p>. Traffic signal: These signals are used to control traffic flow at temporary traffic control zones.</p> <p>9. Dynamic message sign: This is an electronic traffic sign often used on roadways to give travelers information about special events. Such signs warn of traffic congestion, accidents, incidents, roadwork zones, or speed limits on a specific highway segment.</p> <p>In urban areas, VMS are used within parking guidance and information systems to guide drivers to available car parking spaces.</p> <p>Note: Credit shall be given to any other advance traffic devices</p>	04
	<p>(f) Write the role of Automobile engineers in automobile industry.</p>	04
	<p>Answer: (Any four equivalent points – 1 mark each)</p> <p>Role of an Automobile engineer in transport organization:</p> <p>An Automobile Engineer is the real technocrat in automobile as well as transport industry, so he is required to play an important role as a responsible person as follows:</p> <ol style="list-style-type: none">1. Automobile engineers as an authority have to perform different functions in the office of STA/RTA as licensing authority, registration authority, Taxation authority etc.2. In transport organizations, planning and scheduling various transport operations - Route Survey and trip planning, Scheduling of buses and Crews,3. To maintain different records and its analysis.4. Traffic analysis and control.5. To adopt new technology and to introduce various improvement programs in new generation	04



	<p>vehicle.</p> <p>6. To try for different means of fuel economy.</p> <p>7. To try to make vehicle more attractive, more comfortable and more reliable.</p> <p>8. He is required to carry out the research and impart drivers training and road safety aspects.</p>	
6	Attempt any FOUR of the following:	16
	(a) Give the checklist for buying a used vehicle.	04
	<p>Answer: Checklist for buying a used vehicle: (Any 8 points- each carry ½ mark)</p> <p>1. Tyres: the condition of tyres its life and nature of wear must be noted.</p> <p>2. Body: The condition of the body and paint must be checked.</p> <p>3. Battery: The condition of battery is also essential before valuation because its cost is also high.</p> <p>4. Rattling noise: Check noise level and its origin or source.</p> <p>5. Engine: Starting qualities, good pick up, low fuel combustion, power output must be checked on road test. Check also engine oil pressure. Exhaust smoke will also indicate the condition of cylinder and working parts.</p> <p>6. Running Condition: On the road test it is possible to know drive the mechanism such as clutch, gear box, universal joint, differential. The wear and tear can be seen on road test.</p> <p>7. Registration and Tax payment: The vehicle R.C. book must be checked. This will indicate the model and year of manufacture and number of owners; the tax paid to the insurance, expiry date can also be seen.</p> <p>8. Make and Model, Year: This can be seen from R.C. book but with experience it is possible to indicate the number of years of service of vehicle.</p> <p>9. Number of Owners: From R.C. book it is possible to know the number of owners and type of persons who owned.</p> <p>10. Popularity of the make depending upon the public opinion market rates of the vehicles goes up and down.</p>	04
	(b) Write the function carried out in CIRT.	04
	<p>Answer: Function of CIRT in transport management: (Any four functions- 1 mark each)</p> <p>The central Institute of road transport (CIRT) was established in 1967 on the joint initiative of the association of State Road Transport Undertakings (ASRTU) and the ministry of shipping and Transport, Government of India. It plays an important role in transport management as follows-</p> <p>1. By promotion and provision for the study of the principles and practices of organization and management in various spheres of public transport</p> <p>2. It conducts research on critical issues in transport development and to undertake</p> <p>3. Consultancy assignments to improve organizational effectiveness and operational efficiency.</p>	04



	<p>4. It imparts training and education to all categories of managers and professionals engaged in furthering the cause of public transport.</p> <p>5. It helps the government and its agencies in evolving integrating policies and legislative framework to enable a balanced growth of the transport sector.</p> <p>6. It is the clearing house of ideas, information and data pertaining to transport industry with specific reference to satisfy, environment and productivity.</p> <p>7. Lay down standards, specifications and norms for various materials used in heavy vehicles through performance evaluation, material analysis and quality monitoring.</p> <p>8. 7. It undertakes research for improvement and technological up gradation of vehicles used for passenger transportation together with their components and assemblies</p>	
	<p>(c) Give the full form of CRRRI, VRDE, PCRA, and ARAI.</p>	04
	<p>(01 mark each)</p> <p>1) CRRRI : Central Road Research Institute</p> <p>2) PCRA: Petroleum Conservation and Research Association</p> <p>3) CIRT: Central Institute of Road Transport</p> <p>4) VRDE: Vehicle Research and Development Establishment</p>	04
	<p>(d) List any four diesel vehicle manufactures in India and mention any one model of each.</p>	04
	<p>Answer: Diesel vehicle manufactures in India: (Any four with one model – 1 mark each)</p> <p>1. Maruti Udyog Ltd., Gurgaon (Manesar) Products/Model: Passenger Cars: Swift - VDi & DZire, Ritz, off-road Gypsy, SUV Grand Vitara, SX4, ERTIGA</p> <p>2. Ashok Leyland Ltd., Chennai: Products/Model –Buses, Trucks, Defense vehicle, Light Commercial vehicle</p> <p>3. Mahindra & Mahindra Ltd., Nashik/Mumbai, Maharashtra. Products/Model –</p> <p>i) Passenger vehicles – Quanto, Bolero, Scorpio, XUV 500 ii) Commercial vehicle – Maximo, Bolero Maxi Truck, Navistar Truck iii) Tractors: Arjun, Bhoomiputra, Sarpanch, Shaan, Yuvraj. 4. Piaggio Vehicles Pvt. Ltd., Baramati</p> <p>Products/Models: i) Passenger Vehicle: ape Xtra DLS, ape city diesel. ii) Cargo: Porter 1000, Porter 600, ape Xtra LD</p> <p>5. TATA Motors Ltd., Pune, Maharashtra. Products/Models:</p> <p>i) Medium and heavy commercial vehicles: Prima, Rigid Trucks, Tractor Trailers, Tippers, construction mixer.</p> <p>ii) Intermediate & commercial vehicles: LPT 1109 Turbo, Truck LP 1109 Turbo.</p>	



iii) Light commercial vehicles: Tata SFC 410 EX, Tata LPT 712 EX, Tata 207 DI - Single cab, Tata 207 DI - Crew cab, SFC 407 Turbo Truck, LPT 709 E Turbo Container truck , LPT 407 Turbo Truck.

iv) Small commercial vehicles: Tata ACE HT, Tata ACE EX, SUPER ACE.

v) Passenger Vehicles: Tata Nano BS IV, Tata Indica Vista, Tata Indica eV2, Indica DLE, Indica DLS, Indica XETA, Indigo Manza.

vi) Defense Vehicles: 2 Stretcher Ambulance, 4 Stretcher Ambulance, Short Wheelbase Bus, Long Wheelbase Bus, Staff Car, SFC 407 - 1.5 ton 4x4, LPTA 715 - 2.5 ton 4x4, GS role vehicle SA 1212 - 6 ton 4x4, LPTA 1413 - 7 ton 4x4, SAK 1212 - 4.5 cubic meter 4x4 tipper.

6. Bajaj Auto Ltd., Pune, Maharashtra
Products/ Models: i) Goods Carriers: GC Max Diesel, GC Max CNG, RE 60
ii) Passenger Carriers: RE Diesel, RE GDI, Mega Max

7. Volkswagen Group India Private Limited - Chakan, Maharashtra.
Products/ Models: i) Passenger vehicles: Polo(TL/CL/HL), Vento 1.5 TDI, Jetta
ii) Station wagon - Touareg, Phaeton

8. Hindustan Motors Ltd., Uttarpara, West Bengal.
Products/ Models: i) Passenger vehicles – Ambassador, Pajero, Lancer, Outlander.

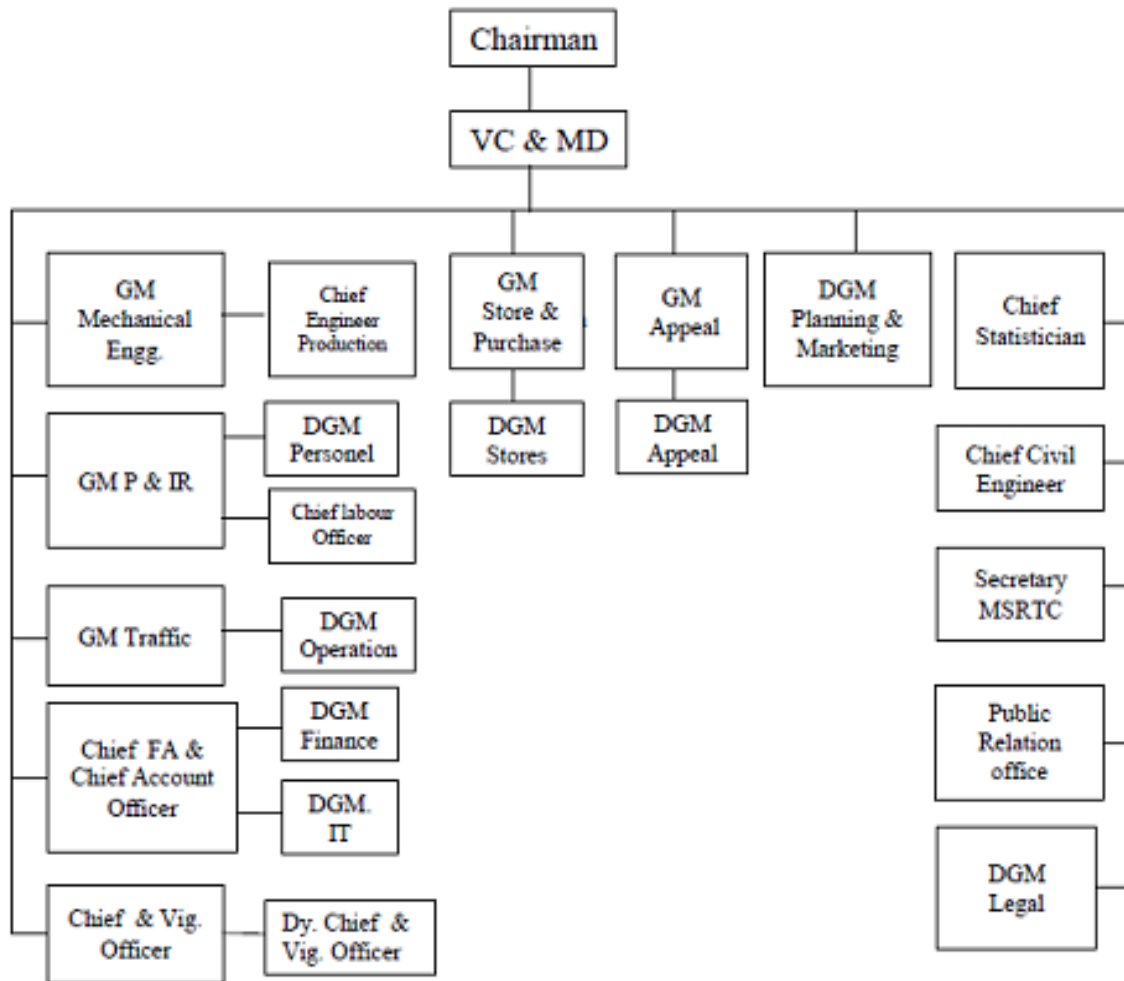
04



(e) Draw a organizational structure of MSRTC.

04

Organizational structure of MSRTC



04