

WINTER – 19 EXAMINATION
Model Answer

Subject Name: Transport Management (TMM)

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.

Que No.	Sub Q. No.	Answer	Marking Scheme
Q. 1	A)	Attempt any THREE of the following	12
	i)	Define- 1) Light Motor Vehicle, 2) Driving Licence	04
	Ans	1) Light Motor Vehicle – A transport vehicle or omnibus, the gross vehicle weight of a motor car or tractor or road roller, the unladen weight of any of which does not exceed 7500kg. 2) Driving Licence - It is the licence issued by a competent authority under Chapter II authorising the person specified therein to drive, otherwise than as a learner, a motor vehicle or a motor vehicle of any specified class or description.	2 marks each
	ii)	What is meant by fixed cost and depreciation cost?	04
	Ans	Fixed Cost - A fixed cost is a cost that does not change with an increase or decrease in the amount of goods or services produced or	2 marks each



	<p>sold. Fixed costs are expenses that have to be paid by a company, independent of any specific business activities.</p> <p>Depreciation Cost- Depreciated cost is the value of a fixed asset net of all accumulated depreciation that has been recorded against it. In a broader economic sense, the depreciated cost for industry is the aggregate amount of capital that is "used up" in a given period, such as a fiscal year. it</p>	
	<p>iii) What do you check in 'Test Drive' of car while buying a new car?</p>	<p>02</p>
<p>Ans</p>	<p>It is critical to inform the dealership to test drive a particular version and not a generic model.</p> <p>During test drive, confirm the following:</p> <p>Engine: Does the test drive car have the engine shortlisted by you e.g. Petrol or Diesel, 2.4L or 3L?</p> <p>Gearbox: Does it have the kind of gearbox you are looking for e.g. manual or automatic?</p> <p>Features: Does it have the features that are going to help you decide e.g. height adjustable driver seat, lumbar support, power steering etc?</p> <p>Upholstery: If the car is offered in more than one upholstery options, ask for the car with the upholstery you are interested in e.g. black or beige.</p> <p>Having the exact engine and gearbox is critical. If the dealership doesn't have the version you wish to test drive, you might want to consider another dealership.</p> <p>Convenient Time and Place</p> <p>Test drives normally take about an hour from start to finish, including test driving the car and discussions with dealer executive post test-drive. We strongly recommend that you schedule the test drive at a convenient time and place so that you don't have to hurry up. The test drive should typically be scheduled on a day you are relatively free and are at leisure.</p> <p>Things to Take Along</p> <p>Family / friends – Have family members or friends join you for a test drive. They can give feedback on how the ride feels in the back seat</p>	<p>Any 4 points- 1 mark each</p>



	<p>and will give you a proper understanding of how many people you can actually seat comfortably. They will also help in observing things that you might miss out on.</p> <p>Your favourite music – Take along a CD/ USB drive with your music on it to test the music system of the car.</p>	
iv)	List any eight automobile manufacturing industries of India	04
Ans	<ol style="list-style-type: none">1. Maruti Udyog Ltd.2. Ashok Leyland Ltd.3. Mahindra & Mahindra Ltd.4. Piaggio Vehicles Pvt. Ltd.5. TATA Motors Ltd.6. Bajaj Auto Ltd.7. Volkswagen Group India Private Limited.8. Hindustan Motors Ltd.9. Force Motors	Any eight- ½ mark each



		10. Hindustan Motors 11. Ford India 12. BMW India 13. Premier	
Q. 1	B)	Attempt any ONE of the following	06
	i)	Write the procedure and documents required for getting driving licence of a tourist car.	
	Ans	Procedure- 1. To Apply for Tourist Car Permit in Maharashtra the applicant has to approach the RTO office to which your area belongs to. Following link can provide you information related to the list of RTO office : Regional Office Locations, Transport Commissioners Office Locations 2. Application Form P.CO.T.A is required. Application forms can be obtained from the following link : English Application Forms, Marathi Application Forms 3. The applicant should make sure they are eligible for applying by reading through the eligibility criteria that has been listed out under the "Eligibility" section of this page. 4. Please make sure you have all the documents that are listed down the "Required Document" section of this page. 5. Application forms can be obtained from the appropriate RTO offices that should be completed and presented with appropriate fees. 6. Present the completed application forms in one of the counter and pay the appropriate fee where the officials would start processing your application. Documents required- • Application in Form P.CO.T.A	2 marks each



	<ul style="list-style-type: none">• Aadhaar Card• PROOF OF ADDRESS (any one of the following to be produced)<ul style="list-style-type: none">• Ration Card• Electoral Roll• Aadhaar Card• IC Policy• Passport• Pay slip issued - Govt. Office (or) a Local Body• School Certificate• Birth Certificate• Affidavit Sworn by the applicant before an Executive (or) a First Class Judicial Magistrate (or) Notary Public• Registration Certificate• Photograph of parking place of vehicle depicting the parked vehicle along with number plate in front and rear view.• Insurance Certificate• Copy of No Objection Certificate issued by the office of the deputy• Passport size photo-2• Pollution under control certificate• Valid tax	
	ii) Describe following terms- 1) learner's licence, 2) driving licence, 3) renewal of licence.	06
Ans	1) Learner's Licence- The licence issued by a competent authority under Chapter II authorising the person specified therein to drive as	2 marks each



		<p>a learner, a motor vehicle or a motor vehicle of any specified class or description.</p> <p>2) Driving Licence- It is the licence issued by a competent authority under Chapter II authorising the person specified therein to drive, otherwise than as a learner, a motor vehicle or a motor vehicle of any specified class or description.</p> <p>3) Renewal of Licence- Any licensing authority renews a driving licence issued under the provision MV act, with effect from the date of expiry. The driving licence shall be renewed with effect from the date of its renewal. The application is made for renewal of licence to drive a transport vehicle or where in any other case the applicant has attained the age of forty years.</p>	
Q. 2		Attempt any FOUR of the following	16
	a)	Define- i) Goods vehicle, ii) Public place	04
	Ans	<p>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.</p> <p>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>	2 marks each
	b)	How the study of market potential helps in transport business?	04
	Ans	<p>(Credit should be given to appropriate answer)</p> <p>Market potential is the entire size of the market for a product at a specific time. It represents the upper limits of the market for a product. Market potential is usually measured either by sales value or sales volume. For transportation business, the information of market potential helps as 1)to decide for expansion or extend routes , 2) starting new venture or terminals , 3)to diversify into new area etc. 4) to understand competition and competitors in market. Study of Market potential- also helps the transportation industry to curtail the operation in particular area. Hence, study of market potential will help the transport industry to grow and increase profitability.</p>	04
	c)	List out the infrastructure facilities required and passenger amenities for bus depot	04



	<p>Ans</p> <ol style="list-style-type: none">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 externally2. Fuelling point3. Fuel storage tanks4. Engineering section - Smaller depot garages may contain the minimum engineering facilities, limited to light servicing facilities5. Inspection pits6. Bus washing bay7. Brake test lane8. Staff canteen/rest room9. Several bus depots are supplemented by a central works facility10. Garages may also contain recovery vehicles to recover break-downs vehicles11. Overhead tank for adequate water supply12. Adequate Electricity facility13. Central Store	<p>Any 8 points- ½ mark each</p>
	<p>d) Write the method of calculating freight for goods and passenger transport</p>	<p>04</p>
	<p>Ans</p> <p>The freight charges are calculated after considering all the expenses incurred with the transportation of goods. Mostly operating charges and fixed charges are taken into account while calculating the freight.</p> <p>a) Operating charges.</p> <ol style="list-style-type: none">1. Diesel cost = $\frac{\text{Number of kilometer} \times \text{Cost of 1 litre diesel}}{\text{Kilometer per liter of vehicle}}$2. Trip and garage expenses.3. Contract charges.4. Tyre wear cost can be calculated per Kilometer.5. Road toll tax <p>b) Fixed charges</p> <ol style="list-style-type: none">1. Tax per trip.2. Insurance3. Administrative charges4. Wages of drivers and cleaners.5. Depreciation per trip.	<p>4 points, 1 mark each</p>



	<p>c) Additional charges</p> <p>1. Hamali charges</p> <p>2. Stationary charges</p> <p>Total operating cost = Operating charges + Fixed Charges + Additional charges</p> <p>Contact approved truck suppliers for the availability of truck and rate. Record their name and rates in register. Choose the truck supplier whose services are prompt and rates are economical.</p>	
	<p>e) What is mean by scheduling? Which factors are considered while preparing schedules?</p>	04
	<p>Ans A schedule as a basic time-management tool, consists of a list of times at which possible tasks, events, or actions are intended to take place, or of a sequence of events in the chronological order in which such things are intended to take place. The process of creating a schedule, deciding how to order these tasks and how to commit resources between the variety of possible tasks, is called scheduling</p> <p>Factors to be considered-</p> <p>Bus scheduling</p> <ul style="list-style-type: none"> • Traffic demand • Calculate time • Vehicle utilization • Requirement of buses <p>Crew Scheduling</p> <ul style="list-style-type: none"> • Hours of works • Daily and weekly interval for rest • Spread over • Spells of duty 	<p>Definitio n- 2 marks, 4 factors- ½ mark each</p>



	<ul style="list-style-type: none"> • Handling and taking overtimes <p>Maintenance scheduling</p> <ul style="list-style-type: none"> • Space available • Time required for servicing of bus • Man power available • Other facilities, major equipments, parking area available 	
	f) Write about role of surveyor during accident survey	04
Ans	<p>Following are the duties of Surveyor-</p> <ul style="list-style-type: none"> • Maintaining confidentiality and neutrality without jeopardising the liability of insurer and claim of the insured. • Conducting inspection and re-inspection of the property in question suffering a loss. • Examining, inquiring, investigating, verifying and checking upon the causes and the circumstances of the loss in question including extent of loss, nature of ownership and insurable interest. • Conducting spot and final surveys, as and when necessary and comment upon franchise, excess/under insurance and any other related matter. • Estimating, measuring and determining the quantum and description of the subject under loss. • Advising the insurer and insured about loss minimisation, loss control, security and safety measures whenever appropriate, to avoid further losses. • Commenting on the admissibility of the loss as also observance of warranty conditions under the policy contract. • Surveying and assessing the loss on behalf of insurer or insured. • Assessing liability under the contract of insurance. • Pointing out discrepancy, if any in the policy wordings. 	Any 4 points, 1 mark each



		<ul style="list-style-type: none"> • Satisfying queries of the insured and of persons connected there to in respect of the claim/loss. • Recommending applicability of depreciation and the percentage and quantum of depreciation. • Giving reasons for repudiation of claim, in case the claim is not covered by policy terms and conditions. • Taking expert opinion, whenever required. 	
Q. 3		Attempt any FOUR of the following	16
	a)	What is the use of FORM 1, FORM 1A, FORM 2 and FORM 3 during learners licence?	
	Ans	<p>FORM 1- It is the application cum declaration of physical fitness</p> <p>FORM 1A- It is a format of Medical certificate</p> <p>FORM 2- Application for the grant or renewal of learners licence</p> <p>FORM 3- Learner's licence application format</p>	1 mark each
	b)	What is the age limit for getting different licences and meaning of restriction on holding licence?	04
	Ans	<p>Age limits-</p> <ul style="list-style-type: none"> • Age between 16 to 18 years for motor cycle without gear with engine capacity not exceeding 50 cc. • Age 18 years and above for motor cycle with gear or light motor vehicle. • Age 20 years for Transport Vehicles and one year driving experience of light motor vehicle. <p>Restrictions on holding licence-</p> <ul style="list-style-type: none"> • No person shall, while he holds any driving licence for the time being in force, hold any other driving licence except a learner's licence, the person specified therein to drive a motor vehicle. 	2 points each, 2 marks each



	<ul style="list-style-type: none">• No holder of a driving licence or a learner's licence shall permit it to be used by any other person.• Nothing in this section shall prevent a licensing authority having the jurisdiction referred to in sub-section (1) of section 9 from adding to the classes of vehicles which the driving licence authorises the holder to drive.	
	c) Write the procedure for registration of a car purchased from other state	04
Ans	Following is the procedure – <ul style="list-style-type: none">– Apply for the NOC by submitting RTO Form 28 to the RTO of the original state.– If you plan on selling your car in the new state already, you would need the RTO Form 29 from the original RTO– Submit the NOC to the new RTO– Pay the road tax applicable in the new state– Get a new vehicle registration number from the new RTO	Any 4 points, 1 mark each
	d) What is the difference in procedure while in transfer of ownership of vehicle within same authority and two different authorities?	04
Ans	(Credit should be given to appropriate Answer) Transfer of ownership of the vehicle in case it is purchased by someone else: In this situation, the name of the buyer has to be added in the registration certificate as the owner of the vehicle instead of the name of the previous owner. In case, the transfer of ownership of the vehicle is taking place because of the purchase of the vehicle by another person, Form 29 has to be submitted with all the details of the transferor and transferee. The form has to be submitted to the registering authority in the area of residence of the transferee and the transferor. If the transfer of ownership of the vehicle is occurring within the same	04



	<p>state, the transferee has to submit Form 30 within 14 days of the transfer in addition to the documents that have to be submitted under Form 1.</p> <p>If the transfer of ownership of the vehicle is occurring outside the state, the transferee has to submit Form 30 within 45 days of the transfer in addition to the documents that have to be submitted under Form 1 and Form 2.</p> <p>The transferee also has to pay the charges levied by the registering authority under Rule 81 of the Central Motor Vehicle Rules 1989.</p>	
	<p>e) What are the duties and responsibilities of conductor?</p>	<p>04</p>
<p>Ans</p>	<ul style="list-style-type: none">• He should not allow any person or thing to be placed or to be in the space reserved for the driver seat in such a way that as to interfere a clear vision of the road and control of vehicle.• He should not smoke on duty.• He should be very clearly dressed as specified by the Regional Transport Authority and should behave in manners with the passengers.• He should not unduly delay on the journey.• In case of mechanical breakdown or other causes beyond his control he should arrange to convey the passengers to their destinations in some other vehicle.• He should have regard to his duties and should follow the rules and regulations.• He should not allow any person to whom he believes to suffering from any infections or contagious disease to be carried in vehicle.• He should carry his licence while driving a vehicle and should produce the same for inspection when asked for by a police officer of concerned authority in uniform.• He should issue ticket of desired stage.• He should collect correct amount of fare.	<p>Any 4 points</p>



		<ul style="list-style-type: none"> • He should make report in bus stand. • He should check documents for concession in fare. • He should help to disabled person to get in or exit from the bus. • He should ring the bell as necessary. • In case of accident, he should provide first aid to passengers. • At any place, where hamal is not present, he should help the passenger to carry the luggage inside the vehicle. 	
Q. 4	A	Attempt any THREE of the following	12
	i)	What is meant by 'No fault liability'?	04
	Ans	<ul style="list-style-type: none"> • Sec 140 of Motor Vehicles Act, 1988 deals with the liability without fault. • The claimant involved in a motor vehicle accident is not required to prove wrongful act, neglect, or default on the part of the owner of the vehicle or by any other person. • The claim under these provisions is neither defeated or affected in any way, by any wrongful act, neglect or default on the part of the claimant; nor can be of the claimant's share of responsibility for the accident. • In other words, the legal defense of 'contributory negligence' is not available to the motorist and his insurer. • These provisions apply in cases where the claimant suffers death or permanent disablement, as defined in the Act. The amounts of compensation are fixed as follows: <ul style="list-style-type: none"> 1) Death, Rs, 50,000 2) Permanent Disablement Rs. 25,000 • The object behind no-fault principle is to give minimum statutory relief expeditiously to the victim of the road accident or his legal representative. To that extent, these provisions constitute a measure of social justice. 	Any 4 points, 1 mark each



	ii)	Describe 'Trip Operational Sheet'	04
	Ans	Trip Operational sheet (TOS): Trip operation sheet gives detailed information about a trip like <ul style="list-style-type: none">– Loading (Dispatching) and unloading (destination) points,– Distance between stations,– Number of days taken for journey,– Number of idle days,– Fuel consumption and lubrication consumption,– Repairs and spares, miscellaneous accessories,– Fines and expenses incurred in journey,– Commissions and general expenses and Government and municipal charges etc.	Any 4 points, 1 mark each
	iii)	List the various sources, from where we can buy used cars/ vehicles	04
	Ans	<ul style="list-style-type: none">● People you know● Bulletins boards at work● Newspaper ads and papers● Various websites	Any 4 points, 1 mark each
	iv)	State the function of CIRT	04
	Ans	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- <ol style="list-style-type: none">1. By promotion and provision for the study of the principles and practices of organization and management in various spheres of public transport2. It conducts research on critical issues in transport development and to undertake3. Consultancy assignments to improve organizational effectiveness and operational efficiency.	



		<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. It undertakes research for improvement and technological up gradation of vehicles used for passenger transportation together with their components and assemblies.</p>	
Q. 4	B	Attempt any ONE of the following	06
	i)	List different types of permits required for control of transport and explain about temporary permit	06
	Ans	<p>Types of Permits.</p> <ul style="list-style-type: none"> 1. Stage carriage permit 2. Contract carriage permit 3. Private service vehicle permit 4. Goods carriage permit 5. National permit 6. All India Tourist permit <p>Temporary permit</p> <ul style="list-style-type: none"> • A temporary permit is issued by STA under Section 87 of Motor Vehicles Act, 1988 to transport vehicle for a limited period, enabling the vehicle to go outside the state for the following reasons:- 1. For the conveyance of passengers on special occasions such as to and from fairs and religious gatherings, or 2. For the purposes of a seasonal business, or 3. To meet a particular temporary need, or Pending decision on an application for the renewal of a permit. 	<p>Any 4 types, 1 mark each.</p> <p>Explanation- 2 marks</p>
	ii)	Describe vehicle and traffic navigation system	06



	<p>Ans Importance of vehicle and traffic navigation system</p> <ul style="list-style-type: none">• To locate vehicle• Fleet management• Vehicle security• Teens safety• School buses safety• This data provides important information for decision making <p>Global Positioning System (GPS)-</p> <p>GPS based system provides the possibility of monitoring the movement of vehicles at an affordable cost. It also ensures that the bus touches the entire route points as per schedule.</p> <p>Intelligent transport System-</p> <p>Involves two kinds of wireless communication</p> <ol style="list-style-type: none">1. V2V (Vehicle to Vehicle)- Useful at cross roads. V2V will communicate at particular range and avoid accidents.2. V2i (Vehicle to Road Side Units) <p>Other advanced techniques used to control traffic-</p> <ul style="list-style-type: none">• Traffic camera• Ramp meter• Highway advisory radio• Roadside traffic sensors• Variable speed limits	<p>Any 6 points, 1 mark each</p>
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	<ul style="list-style-type: none"> • Bluetooth • Traffic signal 	
Q. 5	Attempt any FOUR of the following	16
	a) List the factors considered while buying a new vehicle	04
Ans	<p>Tips and points to be checked for buying new vehicle</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 & where to buy a vehicle.</p> <p>h) Closing the deal: Vehicles prices hike up and down often, so</p>	Any 6 points, 1 mark each





		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.	
	b)	Write about importance of warranty system	04
	Ans	Importance of warranty system: <ul style="list-style-type: none">– A warranty is usually a written contract for a product and declares the maker's responsibility to repair or replace a defective product or its parts.– When you make a major purchase, the manufacturer or seller makes an important promise to stand behind the product.– Some warranties provide coverage only if you maintain or use the product as directed.– Make sure the warranty will meet your needs.– In warranty system defective parts are replaced or repaired in stipulated time. The cost is not charged from the customer.– These expenses of repairs are born by the manufacturer. Sometimes with the understanding of parent company the warranty claims are offered to their customers even after expiry of warranty period.– If any product has been purchased under warranty and found any defect within warranty period, one must contact the retailer and try to resolve the problem.– Otherwise one must contact state or local consume protection office - if you can't resolve the situation with the seller or manufacturer. If all else fails, one may want to consider a lawsuit.	Any 4 points, 1 mark each
	c)	Define- i) Ex-showroom price, ii) On road price	04
	Ans	i) Ex-showroom price- It is the cost that the dealer charges for procuring the vehicle from manufacturer and the tax that it pays to the state government on procurement. The state government charges excise duty on vehicle. It is also known as the supply price of a vehicle.	2 marks for each definition



	<p>ii) On road price- It is the final price payable by the customer to the vehicle dealer and is also known as invoice value of the vehicle.</p> <p>It includes state registration charges, road tax, insurance charges and may also include optional charges such as for extra accessories, additional warranty coverage etc.</p>	
	<p>d) How the vehicles are prepared while selling an old car?</p>	<p>04</p>
<p>Ans</p>	<ol style="list-style-type: none">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".2. Before you advertise your car for sale, make sure it looks clean and attractive:3. Wash and vacuum the car.4. Make sure that vehicle is free from abnormal sounds, dents, scratches.5. If necessary, make low cost repair or replacement of parts.6. Wipe the brake dust off the wheel covers and treat the tyres with a tyre gloss product.7. Thoroughly clean the windows (inside and out) and all the mirrored surfaces.8. Wipe down the dashboard and empty the ashtrays.9. Keep all maintenance records ready to show prospective buyers.10. If necessary, do the servicing.11. Documentation: Following documents are required while selling the vehicle -<ol style="list-style-type: none">(i) Registration certificate(ii) Tax certificate(iii) Insurance certificate(iv) PUC certificate	<p>Any 4 points</p>

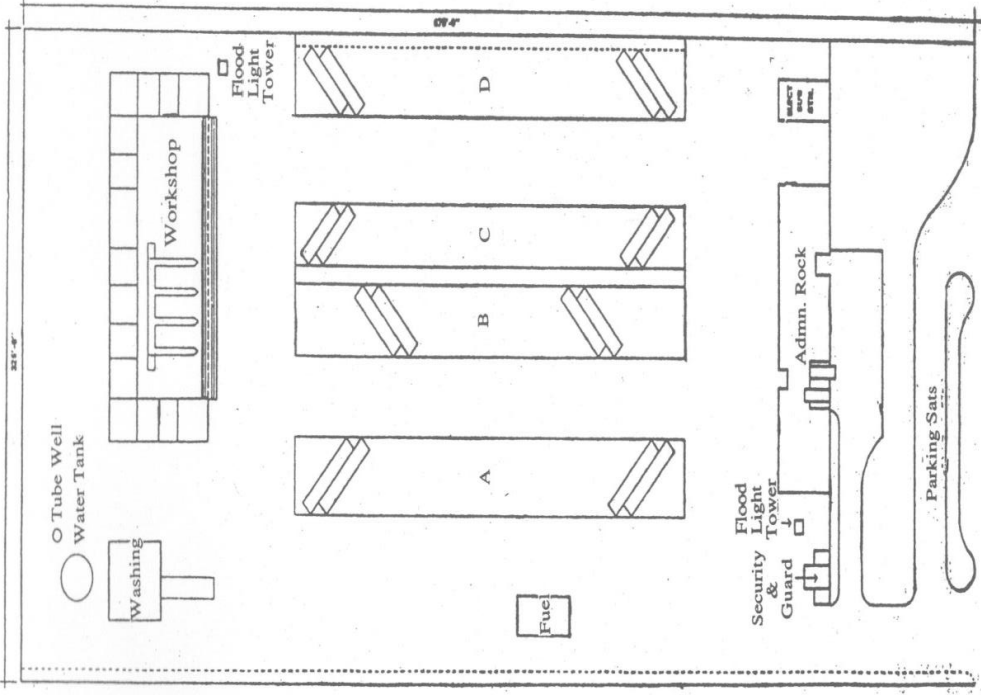


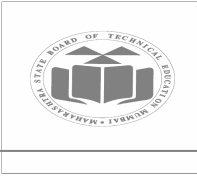
		(v) NOC certificate 12. Set your vehicle price: Keep the written estimate of repair on damage if any before selling. Take a copy of service record from the dealer to assure that the vehicle is	
	e)	What is the use of consignment note and list various types of booking.	04
	Ans	<p>Goods Consignment Note- It is the additional document issued by the Goods Transport Agency in addition to the invoice which is mandatory requirement.</p> <p>It is issued against the receipt of goods for the purpose of transport of goods by road in a goods carriage, and must be numbered serially.</p> <p>Types of bookings-</p> <ol style="list-style-type: none"> 1) To pay at destination 2) Paid 3) Billing 4) Online payment 	<p>Explanation, 1 mark each</p> <p>Types- ½ marks for 4 points</p>
	f)	Draw neat sketch for one way sign and overtaking prohibited	04
	Ans	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>One way sign</p> </div> <div style="text-align: center;">  <p>Overtaking prohibited</p> </div> </div>	2 marks each
Q. 6		Attempt any FOUR of the following	16

	<p>a) Explain following- i) Compulsory traffic signs, ii) Cautionary sign</p>	<p>04</p>
<p>Ans</p>	<p>Compulsory traffic signs- These are road signs which are used to set the obligations of all traffic which use a specific area of road. Unlike prohibitory signs, mandatory signs tell traffic what it must do, rather than must not do. Most mandatory road signs are circular, may use white symbols on a blue background with white border or black symbols on a white background with a red border, although the latter is also associated with prohibitory signs.</p> <div data-bbox="516 632 1214 1052" data-label="Image"> </div> <p>Cautionary sign- Cautionary road signs (traffic signs) are like advisory without any obligation on road users to take some action. These signs warn road users about something or road condition that they need to be aware of for safe travel. Completely ignoring these signs may lead to accidents in worst case scenario.</p> <p>Mostly cautionary road signs are in triangular shape where border is in red colour, background in white and there could be an image in black colour. Though there is an exception to this norm, roundabout sign is of circular shape with blue background.</p> <div data-bbox="711 1465 1024 1801" data-label="Image"> </div>	<p>2 marks each</p>
<p>b)</p>	<p>List out ways for intelligent transport system</p>	<p>04</p>



	Ans	<ul style="list-style-type: none"> ● GPS on public transport or fleet vehicles ● GPS on smartphones ● Sensors on smartphones ● Using ordinary phones ● Specialized hardware on vehicles ● Teledensity ● Bluetooth ● Loops and magnetic sensors ● Images and videos ● Acoustic sensors ● RF sensors ● New social networking models ● Incentive models ● Noise reduction 	Any 4 points
	c)	Write the working of MSRTC	04
	Ans	<p>Maharashtra State Road Transport Corporation (MSRTC)</p> <ul style="list-style-type: none"> – It is the state run bus service of Maharashtra, India with approx.16, 000 buses which ferry 7 million passengers daily on 17,000 routes. – It is the third largest bus service provider in India and serves routes to towns and cities within Maharashtra and adjoining states. – It employs the three tire system for maintaining their buses as Central Workshop, Divisional Workshop and Depots. The work distribution at different levels is as follows- <p style="margin-left: 40px;">i) Central Workshop: This performs Reconditioning of engine, gear box and differential, Work pertaining to major accidents, Body building, Tyre retreading, and work pertaining to retrieval of</p>	Any 4 points, 1 mark each

	<p>spare parts etc.</p> <p>ii) Divisional Workshop- This performs Reconditioning of starter motor, Brake units, Radiators, Work pertaining to minor accidents, Body repairs, Periodical road worthiness inspection, RTO approval of reconditioned buses etc.</p> <p>iii) Depot: This performs Washing, cleaning, oil change, minor servicing, replacement of all major and minor units and assemblies etc</p>	
	d) Draw layout of depot of MSRTC	04
Ans		Figure3 marks, Titles- 1 mark
	e) List out the various research organisation	04
Ans	<ul style="list-style-type: none"> • Automotive Research Association of India (ARAI) • Central Institute of Road Transport (CIRT) • Central Road Research Institute (CRR) • Petroleum Conservation Research Association (PCRA) • Vehicle Research and Development Establishment (VRDE) 	Any 4 points, 1 mark each



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