



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

Important Instructions to examiners:

The answers should be examined by key words and not as word-to-word as given in the model answer scheme.

- 1) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 2) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills).
- 3) 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.
- 4) 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.
- 5) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
- 6) For programming language papers, credit may be given to any other program based on equivalent concept.

Q. No	Sub Q.N.	Answer	Marking Scheme
1	A)	Attempt any THREE:	12
	a)	Define the terms as per Motor Vehicle Act : i) Certificate of Registration ii) Fare iii) Goods carriage iv) Unladen weight	04
		Answer: i) Certificate of Registration: It means the certificate issued by a competent authority to the effect that a motor vehicle has been duly registered in accordance with the provisions of Chapter IV of MVA. ii) Fare: It means the sum payable for a daily or seasonal ticket in respect of the hire of a contract or Stage carriage iii) Goods carriage: 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. iv) Unladen weight: The weight of a vehicle or trailer including all equipment ordinarily used with the vehicle or trailer when working, but excluding the weight of a driver or attendant; and where alternative parts or bodies are used the Unladen weight of the vehicle means the weight of the vehicle with the heaviest such alternative part or body	(Each 1 marks)
	b)	What is National Permit? State four vehicles which are exempted from the Permit.	04
		Answer: National Permit: (02 Marks) National permits are issued to goods vehicles to enable them to go outside the home state. National Permit is issued for a minimum of four continuous states (including the home state). For obtaining such permits the maximum age of a particular vehicle should not exceed 12 years. However, maximum age in case of a multi-axle vehicle should not exceed 15 years. For the issue of National Permit, applicant has to apply on form 46 and 48 along with other formalities	



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	<p>Vehicles exempted from Permit: (Any four – 2 mark each)</p> <ol style="list-style-type: none">1) Any transport Vehicles own by central or state government, & used for government purposes. It should not be connected with any commercial enterprise.2) Any transport vehicle used for government purpose by order.3) 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.4) Any transport vehicle solely used for police, fire brigade and medical purposes.5) Any transport vehicle used for towing breakdown vehicles or used for removing goods from breakdown vehicles to the place of safety.6) Any transport vehicle used for the purpose of any educational institutes which is recognized by state government or central government.7) 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.8) Any goods vehicle whose gross vehicle weight does not exceed 300 Kg.9) Any transport vehicle used for the social purposes such as at the time of flood, earthquakes and for any natural calamities. .10) Any transport vehicle proceeding empty for registration.11) Any transport vehicle proceeding empty for major repairs12) 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	
c)	<p>Who are exempted from the payment of tax? Give reasons.</p>	04
	<p>Answer: Vehicles exempted from Tax Payment: (Any Four - each point carry 1 Mark)</p> <ol style="list-style-type: none">1) Vehicles belong to state government, local self-government, Municipal Corporation etc.2) Ambulance working on no loss no profit basis.3) Invalid carriage.4) Vehicles solely used for transportation of school children and owned by school or private person.5) Vehicles belong to Orchestra, Tamasha Mandal, Drama Theatre, etc.6) Vehicles under non use.7) Tractors and trailers used for agriculture purpose. <p>Reasons: The above mentioned vehicles are exempted from tax being used for state Government, Central Government, Municipal Corporation, as well as work for social, cultural, educational, agricultural activities</p>	04
d)	<p>Describe the procedure required for permanent driving license.</p>	04
	<p>Answer: To get permanent driving license, Applicant should have a valid learner licence. He can apply after 30 days and within 180 days from the date of issuance of learner licence. He should be conversant about the vehicle systems, driving, traffic rules & regulations. In order to apply for Permanent Driving License.</p>	04



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

Document Required: The documents required along with permanent driving license application form are as follows:

- i. Form No.4 (license to drive motor vehicle) applicant photograph and completely fill with signature and duly passing by the Police Dy. Inspector
- ii. Original Learner License.
- iii. Residential Certificate (voter card/ passport/ telephone/electricity bill/ ration card etc attach any two attested copies
- iv. Birth Certificate (Age) (Minimum age 18 years) (birth certificate issued by M.C., school certificate, PAN card and birth certificate issued from Civil Surgeon attach attested copies.)
- v. Self declaration certificate.
- vi. Valid fees/service charge.

After scrutiny of the documents, the applicant is put through the driving test. For driving test, the applicant has to bring his vehicle with him. He is tested for his driving skills, familiarization with the vehicle, traffic rules & regulations. The applicant is asked about the vehicle system and safety.



Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	B)	Attempt any ONE:	06																																												
	a)	Describe three offences commonly committed by motorist and the penalties prescribed thereof.	06																																												
		<table><tr><th>No.</th><th>Nature of Offence</th><th>Section of M. V. Act 1988</th><th>Penalty/Compound Fee (Rs)</th></tr><tr><td>1</td><td>Traveling without ticket</td><td>178 (1)</td><td>200</td></tr><tr><td>2</td><td>Refuses to supply a ticket or supplies an invalid ticket</td><td>178 (2)</td><td>200</td></tr><tr><td>3</td><td>Allowing unauthorised person to drive vehicles</td><td>180</td><td>300</td></tr><tr><td>4</td><td>Driving vehicles without valid licence</td><td>181</td><td>300</td></tr><tr><td>5</td><td>Obtaining driving licence not been entitled or who is disqualified</td><td>182 (1)</td><td>200</td></tr><tr><td>6</td><td>Obtaining conductor's licence not been entitled or who is been disqualified</td><td>182 (2)</td><td>100</td></tr><tr><td>7</td><td>Using vehicle in violation of pollution norms</td><td>190 (2)</td><td>500 each</td></tr><tr><td>8</td><td>Sale of a vehicle or alteration of vehicle in contravention to provisions of motor vehicles laws</td><td>191</td><td>300</td></tr><tr><td>9</td><td>Using vehicle without registration</td><td>192 (1)</td><td>1) 300 each 2) 1000 each</td></tr><tr><td>10</td><td>Driving uninsured vehicle</td><td>196</td><td>300 each</td></tr></table>	No.	Nature of Offence	Section of M. V. Act 1988	Penalty/Compound Fee (Rs)	1	Traveling without ticket	178 (1)	200	2	Refuses to supply a ticket or supplies an invalid ticket	178 (2)	200	3	Allowing unauthorised person to drive vehicles	180	300	4	Driving vehicles without valid licence	181	300	5	Obtaining driving licence not been entitled or who is disqualified	182 (1)	200	6	Obtaining conductor's licence not been entitled or who is been disqualified	182 (2)	100	7	Using vehicle in violation of pollution norms	190 (2)	500 each	8	Sale of a vehicle or alteration of vehicle in contravention to provisions of motor vehicles laws	191	300	9	Using vehicle without registration	192 (1)	1) 300 each 2) 1000 each	10	Driving uninsured vehicle	196	300 each	(Any 03 offenses -each 02 marks)
No.	Nature of Offence	Section of M. V. Act 1988	Penalty/Compound Fee (Rs)																																												
1	Traveling without ticket	178 (1)	200																																												
2	Refuses to supply a ticket or supplies an invalid ticket	178 (2)	200																																												
3	Allowing unauthorised person to drive vehicles	180	300																																												
4	Driving vehicles without valid licence	181	300																																												
5	Obtaining driving licence not been entitled or who is disqualified	182 (1)	200																																												
6	Obtaining conductor's licence not been entitled or who is been disqualified	182 (2)	100																																												
7	Using vehicle in violation of pollution norms	190 (2)	500 each																																												
8	Sale of a vehicle or alteration of vehicle in contravention to provisions of motor vehicles laws	191	300																																												
9	Using vehicle without registration	192 (1)	1) 300 each 2) 1000 each																																												
10	Driving uninsured vehicle	196	300 each																																												

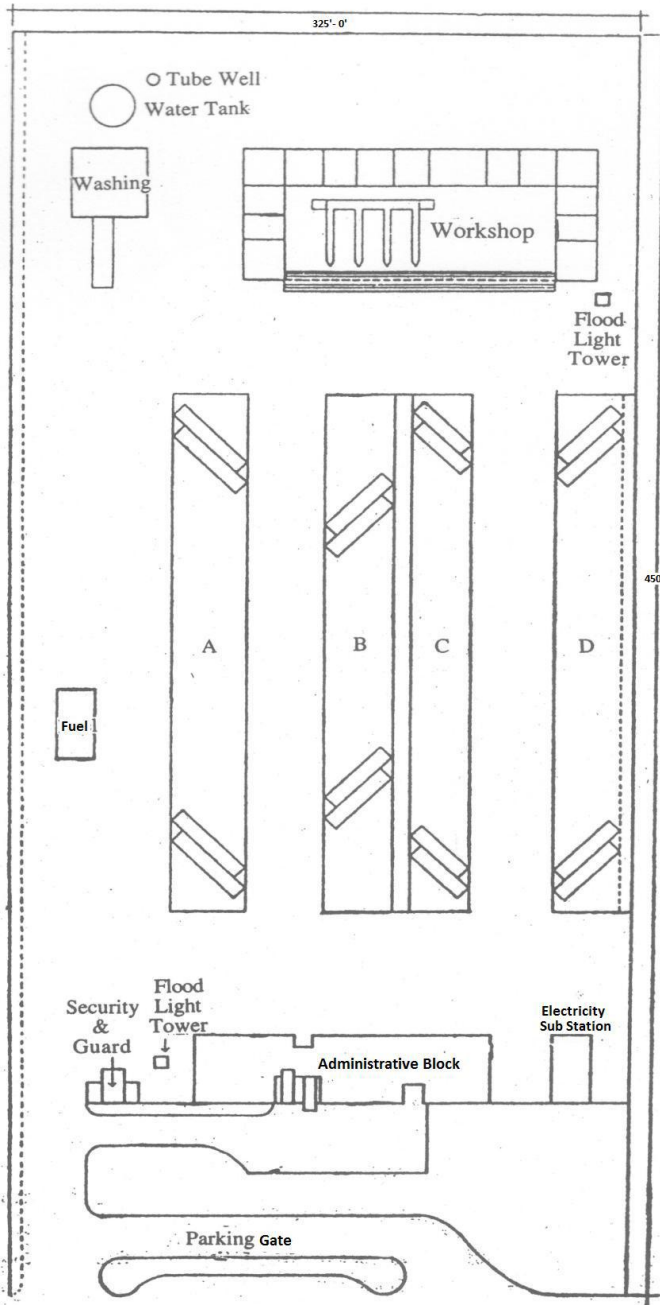


Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	b) Draw the labeled layout of Bus depot. State the factors considered for site selection of Bus depot.	06
	<p>Answer: (Note: Credit should be given to equivalent layout)</p>  <p>The diagram illustrates the general layout of a vehicle bus depot. It is a rectangular area with a width of 325'-0" and a depth of 450'. At the top left, there is a 'Washing' area and a 'Water Tank' (represented by a circle). To the right of the washing area is a 'Workshop' with several bays. Further right is a 'Flood Light Tower'. In the center, there are four vertical parking bays labeled A, B, C, and D. To the left of these bays is a 'Fuel' area. At the bottom, there is an 'Administrative Block' with a 'Security & Guard' post and a 'Flood Light Tower' nearby. To the right of the administrative block is an 'Electricity Sub Station'. A 'Parking Gate' is located at the bottom center of the depot area.</p> <p>General layout of vehicle bus depot</p>	04



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

		<p>Following factors should be considered in selection of site for a depot (any 02 points, 01 mark each)</p> <ol style="list-style-type: none"> 1. The size of a bus depot - Size of bud depot is usually stated in terms of the number of buses that it can accommodate. 2. Location of bus depot - Site should be near to the bus station (To reduce dead km) 3. Availability of Land - Approximate area required for a depot for 100 full-sized buses will be 2 hectares or 20,000 square meters, including buildings. 4. Environmental considerations - The activities of a bus depot and workshop can have a significant impact on the environment. Pollution from exhaust fumes and excessive noise from the vehicles themselves and from other workshop activities. 5. Movement of traffic - The main potential problems are traffic jamming caused by buses entering and leaving the depot, 6. Volume of operations. 7. Site should not be much away from city town or village. 8. Availability of water, electricity, telephone, post office etc. 9. It should be free from fare of flood water logging. 10. The location should be away from tank bed. 11. High Tension lines should not pass over the site. 	02
2		Attempt any <u>FOUR</u>:	16
	a)	Describe the certificate of fitness for transport vehicles.	04
		<p>Answer: Certificate of fitness: It is the document in the prescribed form, showing that vehicle is mechanically fit and comply with all the specifications and requirements of motor vehicle act. If the vehicle to be used for commercial operation the vehicle is inspected physically by Transport Authority on regular basis for its road worthiness. The Certificate of Fitness is issued in Form 38. This certificate while remains effective, be valid throughout India.</p>	04
	b)	State two functions of each STA and RTA.	04
		<p>Answer: Functions of STA (Any two) i) To give effect to the directions issued by the state government under section 67 to control road transport throughout the state. ii) To co-ordinate and regulate the activities and polices of the Regional Transport Authorities. iii) To settle all disputes and decide the matters where RTAs have difference of opinion. iv) To conduct not less than two meeting in a year. v) To perform the duties of a RTA where there is no such authority and, if it thinks fit or if so required by a RTA, to perform those duties in respect of any route common to two or more regions. vi) To discharge such other functions as may be prescribed.</p> <p>Functions of RTA (Any two) i) RTA provides funding ii) RTA decides different policies to control road transport as per the directions of state</p>	<p>02</p> <p>02</p>



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

		transport authority throughout the region. iii) RTA decides or fixes the form of auto rickshaws, taxis and any other related vehicle etc. From time to time throughout the region. iv) RTA conducts minutes of meeting once or twice in a month. v) RTA handles the business regarding control of road transport.	
	c)	Define the following terms: i) Goods vehicle ii) Route iii) Public place iv) Trip	04
		Answer: 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) Route: It means line of travel of the specific way in between two terminals on which the motor vehicle may be operated. iii) 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. iv) Trip: Journey between two stations i.e. from start of travel to the final destination for carrying passengers or goods on hire or reward is known as trip.	04(01 mark for each)
	d)	What are the general provisions of regarding maintenance of motor vehicle?	04
		Answer: (Any 4 points, each point - 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, i) The width, height, length and overhang of vehicles and of the load carried, ii) The size, nature and condition of tyres, iii) Brakes and steering gear, iv) Signalling appliances, lamps and reflectors v) Speed governors vi) The emission of smoke, visible vapours, sparks, ashes, dirt or oil, vii) The reduction of noise caused by vehicles, viii) The embossment of chassis number and engine number and the date of manufacturing. ix) Safety belts, handle bars of motor cycles, auto-dippers and other equipment essential for safety of driver, passengers and other road users x) Standards of the components used in the vehicle as inbuilt safety devices xi) Provision of transportation of goods of dangerous or hazardous nature to human life xii) Standard for emission of air pollutants.	
	e)	Describe four causes of suspension of registration of vehicle take place.	04
		Answer: A Registering Authority is empowered to suspend the registration of vehicle	04



Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

		<p>If,</p> <p>(a) It is in such condition that its use in a public place would constitute a danger to the public.</p> <p>(b) It fails to comply with the requirements of M.V. Act and rule.</p> <p>(c) It has been, or is being, used for hire or reward without a valid permit.</p> <p>(d) The owner of a vehicle, on demand of a registering authority who has suspended the certificate of registration of the vehicle, surrenders the certificate of registration.</p>	
	f)	What infrastructure facilities are required at Depots? Explain	04
		<p>Answer: Following infrastructural facilities are to be provided in a depot (<i>Any 8 points- each point carry ½ Mark</i>)</p> <ol style="list-style-type: none"> 1. Internal parking and External parking <p>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</p> <ol style="list-style-type: none"> 2. Fuelling 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
3		Attempt any FOUR:	16
	a)	State the importance of warranty system and protection of law.	04
		<p>Answer: Importance of warranty system: 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. For example, a warranty may cover only personal uses as opposed to business uses of the product. 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 you have purchased any product under warranty and found any defect within warranty period, contact the retailer and try to resolve the problem. Otherwise Contact your state or local consumer protection office - if you can't resolve the situation with the seller or manufacturer. If all else fails,</p>	04



Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

		you may want to consider a lawsuit.	
	b)	Describe the basic factors in crew scheduling.	04
		<p>Answer: Factors to be considered in crew scheduling – (Any Four points 01 mark each)</p> <p>1) Hours of works : Section 13 of the motor Transport workers Act lay down that no adult motor transport worker shall be required or allowed to work or more than eight hours in any day and for 48 hours in any week.</p> <p>2) Daily and weekly interval for rest: The hours of daily works should be fixed in such way that no transport worker is allowed and required to work more than 5 hours at a stretch before he has a rest interval for at least ½ hour.</p> <p>3) Spread over : The hours of work of a motor transport worker should not spread over more the 12 hours in any day.</p> <p>4) Spells of duty: The hour of work of motor transport worker should not be split into more than two spells on any day.</p> <p>5) Handling & taking overtime: It includes - the time spent in subsidiary works, Periods of mere attendance at terminals of less than fifteen minutes.</p>	
	c)	How do you select a vehicle for a particular operation? Describe it.	04
		<p>Answer: 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. For example 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.</p> <p style="text-align: center;">OR</p> <p>Selection of a vehicle for a particular operation depends upon following points:</p> <ol style="list-style-type: none"> 1. Capital cost of vehicle: the cost of vehicle 2. Maintenance cost of vehicle 3. Running cost of vehicle 4. Load carrying capacity 5. Nature of roads 6. Demand of traffic or demand of goods 7. Distance between terminals or stations 8. Reliability of vehicle 9. Mechanical strength of vehicle 10. Safety of operation 11. Availability of fuel supply 12. Efficiency of vehicle 13. Type of goods 	04



Model Answer

Subject Code: 17616

Page 10 of 21



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

		<table><tr><th colspan="3">Fifth bus</th><th colspan="3">Sixth Bus</th></tr><tr><td></td><th>Station</th><th>Time</th><td></td><th>Station</th><th>Time</th></tr><tr><td>Departure</td><td>A</td><td>8 am</td><td>Departure</td><td>B</td><td>8 am</td></tr><tr><td>Arrival</td><td>B</td><td>11 am</td><td>Arrival</td><td>A</td><td>11 am</td></tr><tr><td>Departure</td><td>B</td><td>12 pm</td><td>Departure</td><td>A</td><td>12 pm</td></tr><tr><td>Arrival</td><td>A</td><td>3 pm</td><td>Arrival</td><td>B</td><td>3 pm</td></tr><tr><td>Departure</td><td>A</td><td>4 pm</td><td>Departure</td><td>B</td><td>4 pm</td></tr><tr><td>Arrival</td><td>B</td><td>7 pm</td><td>Arrival</td><td>A</td><td>7 pm</td></tr></table> <table><tr><th colspan="3">Seventh bus</th><th colspan="3">Eighth Bus</th></tr><tr><td></td><th>Station</th><th>Time</th><td></td><th>Station</th><th>Time</th></tr><tr><td>Departure</td><td>A</td><td>9 am</td><td>Departure</td><td>B</td><td>9 am</td></tr><tr><td>Arrival</td><td>B</td><td>12 am</td><td>Arrival</td><td>A</td><td>12 am</td></tr><tr><td>Departure</td><td>B</td><td>1 pm</td><td>Departure</td><td>A</td><td>1 pm</td></tr><tr><td>Arrival</td><td>A</td><td>4 pm</td><td>Arrival</td><td>B</td><td>4 pm</td></tr><tr><td>Departure</td><td>A</td><td>5pm</td><td>Departure</td><td>B</td><td>5pm</td></tr><tr><td>Arrival</td><td>B</td><td>8 pm</td><td>Arrival</td><td>A</td><td>8 pm</td></tr></table> <p>(Credit should be given to suitable answer)</p>	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 pm	Departure	A	12 pm	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 pm	Departure	A	1 pm	Arrival	A	4 pm	Arrival	B	4 pm	Departure	A	5pm	Departure	B	5pm	Arrival	B	8 pm	Arrival	A	8 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 pm	Departure	A	12 pm																																																																																														
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 pm	Departure	A	1 pm																																																																																														
Arrival	A	4 pm	Arrival	B	4 pm																																																																																														
Departure	A	5pm	Departure	B	5pm																																																																																														
Arrival	B	8 pm	Arrival	A	8 pm																																																																																														
4	A)	Attempt any THREE:	12																																																																																																
	a)	How the valuation of accidental vehicle is calculated?	04																																																																																																
		<p>Answer:</p> <p>The process of determining the current worth (<i>value</i>) of a vehicle is called as valuation. There are many techniques that can be used to determine value, such as subjective and objective.</p> <p>Following are the factors considered for valuation of vehicle -</p> <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 –<ol style="list-style-type: none">i) Make, Model and Variant E.g. Make – Maruti-Suzuki, Model - Swift Variant - VDiii) Month and Year of Manufacture e.g. June 2012iii) 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.	04																																																																																																
	b)	What factors are to be considered while buying a new vehicle? Describe.	04																																																																																																
		<p>Answer: Factors to be considered while buying a new vehicle.(Any 04 points -1 mark each)</p> <ol style="list-style-type: none">1. 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.2. 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																																																																																																	



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	<p>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>3. 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>4. Inspecting the vehicle: Before purchasing the vehicle inspect the vehicle for whether the features are as per your demands or not.</p> <p>5. 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>6. 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>7. 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>8. 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>	
c)	What preparations need to be done before selling a used vehicle?	04
	<p>Answer: Preparation for selling of vehicle: (Any equivalent four points – 1 mark each)</p> <p>1. Preparation – 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. Before you advertise your car for sale, make sure it looks clean and attractive. This goes beyond just taking it to the car wash.</p> <ul style="list-style-type: none">i) Wash and vacuum the car.ii) Make sure that vehicle is free from abnormal sounds, dents, scratches.iii) If necessary, make low cost repair or replacement of parts.iv) Wipe the brake dust off the wheel covers and treat the tyres with a tyre gloss product.v) Thoroughly clean the windows (inside and out) and all the mirrored surfaces.vi) Wipe down the dashboard and empty the ashtrays.vii) Keep all maintenance records ready to show prospective buyers.viii) If necessary, do the servicing. <p>2. Documentation – Following documents are required while selling the vehicle -</p> <ul style="list-style-type: none">i) Registration certificateii) Tax certificateiii) Insurance certificateiv) PUC certificatev) NOC certificate	



Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	d)	Explain the role of ARAI in Automobile Industry.	04
		<p>Answer: Automotive research Association Of India:-</p> <p>1. ARAI is co-operative industrial research association by the automotive industry with the Ministry of Industries, Government of India. The ARAI is located in the western part of Pune, Maharashtra established in 1986.</p> <p>2. The Role of the Association are to provide research & development in automotive engineering for industry, Product design and development, Evaluation of automotive equipment, Testing, Certification and Calibration services to the industry for developing safe, reliable and eco-friendly & user-friendly vehicles / components / products, Carry out test and calibration in accordance with stated methods and customer's requirements and to Harmonize Indian automotive standards to global standards</p> <p>3. In order to meet the development requirements of Industry, several facility and competence build-up projects are completed. These are Engine Design/Simulation Software Installation, Development of bi-fuel CNG kits, new techniques and software capabilities in Noise, Vibration, Harshness Analysis, Vehicle Crash Analysis, VDACS software for chassis dynamometer control, Particulate Measurement System and Digitally Controlled Load Simulation.</p> <p>4. ARAI is only automotive engineering R&D institute in India to be awarded ISO 9001 Quality System Certification.</p> <p>5. ARAI is the first Indian institute to develop HCNG (Hydrogen blended CNG) fuel engine complying with EURO V standards for light commercial vehicles. (HCNG is greener than CNG and perceived as the ultimate alternative for fossil fuels. The engine has been developed for Tata Motors)</p>	04
	B)	Attempt any ONE:	06
	a)	Describe the procedure of claiming compensation for accidental vehicles.	06
		<p>Answer: Procedure of accident claim :</p> <p>1. The person who are injured or whose property is damaged or nominee of the person who have got death are required to apply for compensation in appropriate form along with the duly filled discharge receipt and the undertaking to Claim Enquiry Officer of the district in which the accident have taken place within the period of six months from the date of accident</p> <p>2. In case of all major accident prefer spot survey. The surveyor will visit the workshop for inspection of the vehicle and finalization of the claim amount with the owner and / or repairer.</p> <p>3. Provide copies of the legal documents, viz FIR, Challans, postmortem report or certificate of injury to the insurance company for quick disposal of claim.</p> <p>4. The Claims Enquiry Officer decides who the right claimant is and submits a report in Form-III to Claims Settlement commissioner who issues the sanction order of the claim in Form IV to the insurance company.</p>	06
	b)	Write the procedure for Freight calculation for hiring a truck.	06
		<p>Answer: 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>	06



Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	<p>1. Diesel cost = $\frac{\text{Number of kilometer} \times \text{Cost of 1 litre diesel}}{\text{Kilometer per litre of vehicle}}$</p> <p>2. Trip and garage expenses.</p> <p>3. Contract charges.</p> <p>4. Tyre wear cost can be calculated per Kilometer.</p> <p>5. Road toll tax</p> <p>b) Fixed charges</p> <p>1. Tax per trip.</p> <p>2. Insurance</p> <p>3. Administrative charges</p> <p>4. Wages of drivers and cleaners.</p> <p>5. Depreciation per trip.</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 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>	
5	Attempt any FOUR:	16
	a) Describe the procedure to prepare accident survey report.	04
	<p>Answer: Steps involved in preparation of accident survey report:</p> <p>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 Registration no. of vehicle involved in accident</p> <p>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.</p> <p>e) Light condition- Daylight, dusk, dark with good street light, dark with no street light.</p> <p>f) Road condition- Straight, bend, intersection, flat, dry, wet, hill, concrete, earth road.</p> <p>g) Traffic condition- Dense/light/moderate traffic, controlled junction, uncontrolled Junction.</p> <p>h) Responsibility of driver- Sex, age, driving experience, intoxicated, asleep or inattentive, speeding.</p> <p>i) Responsibility of Pedestrian- Age, deaf, blind or otherwise walking on road, crossing or running into road, intoxicated, confused by traffic, talking in roadways.</p> <p>j) Particulars of motor vehicle- Age of vehicle, overload, and defective brakes, defective</p>	04



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	steering, puncture or burst, other serious mechanical defects. k) Causalities persons killed/ injured- Rider of motorcycle, passengers other than driver or rider, cyclist, pedestrian, not known. 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.	
b)	Explain the importance of vehicle navigation system.	04
	<p>Answer: Importance of vehicle navigation system (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> <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)	List various advance traffic devices. Describe working of any one.	04
	<p>Answer: Advanced Traffic Control Devices: (List-2 marks, Explanation- 2 marks)</p> <p>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.</p> <p>2. Ramp meter: A ramp meter, ramp signal or metering light is a device, usually a basic traffic</p>	



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

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 conditions.

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.

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.

5. Variable speed limits: Variable speed limits that change with road congestion and other factors

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.

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

8. Traffic signal: These signals are used to control traffic flow at temporary traffic control zones.

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. In urban areas, VMS are used within parking guidance and information systems to guide drivers to available car parking spaces.





Note: Credit shall be given to any other advance traffic devices

Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: 17616


	d)	Describe the system which displays road map marking the exact location of the vehicle.	04
		<p>Answer: Global positioning system:</p> <p>The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of satellites placed into orbit. The GPS is owned and operated by the U.S. Department of Defense but is available for general use around the world. GPS works in any weather conditions, anywhere in the world, 24 hours a day. GPS receivers can be used in cars to relate the driver's location with traffic and weather information.</p> <p>Working of GPS</p> <ol style="list-style-type: none"> 1. 21 GPS satellites and three spare satellites are in orbit at 10,600 miles above the Earth. The satellites are spaced so that from any point on earth, four satellites will be above the horizon. 2. Each satellite contains a computer, an atomic clock, and a radio. With an understanding of its own orbit and the clock, it continually broadcasts its changing position and time. (Once a day, each satellite checks its own sense of time and position with a ground station and makes any minor correction.) 3. On the ground, any GPS receiver contains a computer that "triangulates" its own position by getting bearings from three of the four satellites. The result is provided in the form of a geographic position - longitude and latitude - to, for most receivers, within 100 meters. 4. If the receiver is also equipped with a display screen that shows a map, the position can be shown on the map. 5. If a fourth satellite can be received, the receiver/computer can figure out the altitude as well as the geographic position. 6. If you are moving, your receiver may also be able to calculate your speed and direction of travel and give you estimated times of arrival to specified destinations. 	04
	e)	<p>Identify the type of the traffic signs shown in Fig-1 and write its meaning.</p> <div style="text-align: center;">     </div> <p style="text-align: center;">A B C D</p> <p style="text-align: center;">Fig.1</p>	04

Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

		Answer: (One mark each)	
		 <p>A. Compulsory ahead B. Narrow road ahead C. No entry D. Speed limit</p>	04
	f)	Describe the developments of motor industry in India.	04
		<p>Answer: Development of Automobile industry in India.</p> <p>Until the 1930s, cars were imported directly in India, but in very small numbers. The first car ran on India's roads in 1897.</p> <p>An embryonic automotive industry emerged in India in the 1940s. Hindustan was launched in 1942, long time competitor Premier in 1944. They built General Motors and Fiat products respectively. Mahindra & Mahindra was established by two brothers in 1945, and began assembly of Jeep CJ-3A utility vehicles. Following the independence, in 1947, the Government of India and the private sector launched efforts to create an automotive component manufacturing industry to supply to the automobile industry. In 1953 an import substitution program was launched, and the import of fully built-up cars began to be impeded.</p> <p>However, the growth was relatively slow in the 1950s and 1960s due to nationalisation and the license raj which hampered the Indian private sector. Total restrictions for import of vehicles were set and after 1970 the automotive industry started to grow, but the growth was mainly driven by tractors, commercial vehicles and scooters. Cars were still a major luxury item. In the 1970s price controls were finally lifted, inserting a competitive element into the automobile market. By the 1980s, the automobile market was still dominated by Hindustan and Premier, who sold superannuated products in fairly limited numbers. During the eighties, a few competitors began to arrive on the scene.</p> <p>To promote the auto industry the government started the Delhi Auto Expo which was had its debut showcasing in 1986. The Auto Expo of 1986 was a window for technology transfers showing how the Indian Automotive Industry was absorbing new technologies and promoting indigenous research and development for adapting these technologies for the rugged Indian conditions.</p>	04
6		Attempt any FOUR:	16
	a)	Prepare checklist to buy a used motor vehicle	04
		<p>Answer: checklist to buy a used motor vehicle (Consider any 8 points each point 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>	



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

	<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>	
b)	State four function of CRRI.	04
	<p>Answer: CRRI: (Any four)</p> <p>a) Central Road Research Institute is a premier national laboratory engaged in research and development in the field of roads and road transportation.</p> <p>b) The major research and development program of CRRI relates to the entire spectrum of pavement design and performance, rural roads, traffic and transportation engineering, management and improve technologies for pavement rehabilitation.</p> <p>c) Traffic and transportation planning in mega and medium cities.</p> <p>d) Management of roads in different terrains.</p> <p>e) Utilization of industrial waste in road construction.</p> <p>f) To improve environment pollution.</p> <p>g) Road traffic safety analysis and design.</p> <p>h) Bridge design and evaluation, bridge materials and construction techniques, instrumentation for bridges and highways.</p>	
c)	State role of VRDI in Automobile Industry.	04
	<p>Answer: Role of VRDE: (Any Four)</p> <p>1. Its primary function is to help the defence and automotive industry regarding design, development, testing and certification of vehicle components.</p> <p>2. To evaluate requirements of defence services as well as automotive industry.</p> <p>3. The National Centre for Automotive Testing (NCAT), a separate division of VRDE, provides one stop solution to all vehicles testing (Laboratory as well as Road testing).</p> <p>4. Development of specialist vehicles and systems for various roles including road mobile launchers and support vehicles for strategic missile programmes</p> <p>5. Development of engines for unmanned aerial vehicles.</p> <p>6. Development of light battle tank and systems for various combat roles.</p>	



Winter- 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

		<p>7. Development of armoured wheeled vehicles and variants for various roles.</p> <p>8. Development of systems and unmanned vehicles for nuclear, biological and chemical recycle and after-treatment.</p> <p>9. Development of light unmanned aerial vehicles for low intensity conflict operations.</p> <p>10. Development of multi feed gasification with poly generation technology.</p> <p>11. Testing of military and commercial vehicles and engines for design validation and performance evaluation including emission tests.</p>	
	d)	What are the different elements of marketing in Motor Industry?	04
		<p>Answer: Following are the different elements of marketing in Motor Industry:</p> <p>i) Marketing Research: During the initial phases of the marketing plan completion of Motor Industry, research was held to determine the demand, competitor's analysis, etc.</p> <p>ii) Product: The concept of product in Automobile marketing deals with finding the right product for your target market. The product must be something desired by the intended customer.</p> <p>iii) Price: Price is a very important element of the marketing in motor Industry. The company must create something of value for the consumer.</p> <p>iv) Advertising and Promotion: The Automobile Company uses advertising on various media, such as TV, newspapers, and websites. In addition, the firm promotes its products through public relations.</p>	04
	e)	Describe the working of BEST.	04
		<p>Answer: Working of BEST (Bombay Electric Supply and Transport):</p> <p>1) Organization setup: The Transport Division is headed by Assistant General Manager (Transport), and he is assisted by Chief Manager (Traffic). BEST's entire operation is divided into 25 depots, and all these depots are placed in zones. The Dy. Chief Managers (Traffic) are zonal in-charge, who are assisting the Chief Manager (Traffic). The Depot Managers are heading each Depot. Traffic Superintendents/ Asst Traffic Superintendents, Sr. Traffic Officers, Traffic Officers, Assistant Traffic Officers and Sr. Asst. /Office Asst. assist the Depot Managers. This team of officers directly controls the operational and administrative activities of the respective Depot. Apart from this team, the supervisory category viz. Bus Inspectors, for plugging the leakage in revenue, Starters for controlling the bus operation etc., are appointed at depots. Each depot is provided with a wireless vehicle, which is used to monitor the operation of buses in the jurisdiction of the depot.</p> <p>2) Traffic Control Room: It works round the clock. The section is provided with VHF sets connecting all the depots as also the Police Control, Traffic Police Control, and Railways etc. The officer regulates the entire operation smoothly with the help of the Divisional Officers, by being in touch with them through wireless sets.</p> <p>3) Bus Control Room: It functions round the clock, to attend to the vehicle breakdowns on field. The total operational area is divided into zones. Emergency breakdown vans are provided for each zone. These vehicles are provided with necessary spares/units so as to carry out emergency repairs on the field itself. For speedy communication these vehicles are equipped with VHF sets.</p> <p>4) Traffic Training Center: The BEST has established a Training Center, to provide training</p>	04



Winter– 17 EXAMINATION

Model Answer

Name of Subject: Transport Management

Subject Code: **17616**

and refresher courses to the operating crew members. On line training to new bus drivers is also provided with the help of training vehicles. At the depots Accident Prevention Training Vehicle counselling the operating staff about safe driving habits.

5) **Ticket & Cash department:** The Ticket and Cash Department collects the daily revenue earned at the depots. The same is counted, consolidated, and remitted in the banks. Inventory of ticket blocks to be issued to the conductors, is also maintained by the Ticket & Cash Department.

6) **Accident & Claims Section:** The Accident and Claims Section, as the name suggests, is established for settling the claims of personal injury / death due to accident involving our buses. Also various programs on Road Safety / Passenger Safety, to create awareness amongst the operating staff, passengers, pedestrians, and school children, are organized by this section in co-ordination with Training Center.

7) **Traffic Planning Section:** The Planning Section is established to prepare the schedules for different routes. The schedules are revised after every four months. Uneconomic routes are discontinued and the financial viability of the routes is appraised both at depot level as also at the Head Quarter level.