

ANNEXURE I

Scope of work, Eligibility criteria

1. SCOPE OF SUPPLY

The service provider shall deploy required number of skilled technicians / workmen / personnel and carryout repair / maintenance, washing & servicing, and tyre repairing work of Department vehicles of LPSC.

- a. The service provider shall carryout the works on daily basis by engaging sufficient number of skilled technicians but not less than 17 persons per day (1 Supervisor, 11 technicians, 5 Helpers). **However LPSC reserves the right to increase or decrease number of personnel to be deployed based on the project requirement or exigency. The payment shall be restricted to actual work units performed.**
- b. The work shall be carried out within the premises of LPSC Valiamala, other Centres or Units of ISRO at Thiruvananthapuram or on road (Breakdown).
- c. Service provider shall deploy **One supervisor** who shall supervise the entire activities under this contract and act as a single point of contact with Department for the conduct of contract.
- d. Service provider shall deploy **11 technicians** as per the table -1 and who shall attend all type of mechanical, Electrical and body shop work of the Department vehicles as per clause no. 2.1 and as per the instruction of contact person.
- e. Service provider shall deploy **one helper as tyre repairing person**, who shall attend all type of tyre repairing work of the Department vehicles as per clause no.2.2. Detailed list of work and approximate quantity of works per year is attached in **Annexure F**.
- f. Service provider shall deploy **one helper as fuel pump operator**, who shall carryout all activities related to fuel pump operation as per clause no: 2.4.
- g. Service provider shall deploy **three helpers to carry out the washing and servicing** of vehicles as per clause no: 2.3. Detailed list of work and approximate quantity work per year is attached in **Annexure F**.
- h. The emergency work or breakdown assistance if any on holidays or beyond the office hours should be executed by the service provider as per the instruction of the Contact Person of LPSC.

2. Nature of work and approximate quantity of work.

2.1 Maintenance of vehicle

a. Mechanical Maintenance of vehicles

The entire mechanical maintenance of department vehicles such as Preventive maintenance , Outstation general check- up, Fitness work, Overhauling work (Engine , gear box, Differential, etc.) Overhauling work of fire fighting equipment etc. Detailed list of work and approximate quantity per year is attached in **Annexure F**.

b. Electrical maintenance of vehicles

The entire electrical maintenance of department vehicle such as, Preventive maintenance, Outstation general checkup, Fitness work, Wire harness changing, Overhauling work (Self-starter, Alternator.) Detailed list of work and approximate quantity per year is attached in **Annexure F**.

c. Body shop work of vehicle

Accident repairing work, fitness work, bus body re building, tar felt laying , Vehicle body building work, Vehicle alteration and modification work, Fabrication work etc. Detailed list of work and approximate quantity per year is attached in **Annexure F**

2.2 Tyre repairing work

a. TYRE CHANGING

Replacing/ renewing the damaged or worn out tyre by dismantling the wheel from the vehicle, remove the worn out /damaged tyre from the rim, clean and re- fit the new/ re-treaded tyre with tube and flap to the rim by applying chalk powder properly, Inflate the tyre and refit the wheel to the vehicle.

b. SIDE CHANGING

Some tyres may wear unevenly; such tyres may be dismantled and assembled after reversing the tyre in its position for maximum utilization of tyres.

c. TYRE PUNCTURE REPAIRING

Repairing the punctured tyre of a vehicle by dismantling tyre from the vehicle, remove the punctured tyre from the rim, Patch up the punctured tube , clean and re- fit the tyre with tube and flap to the rim by applying chalk powder properly, Inflate the tyre and refit the wheel to the vehicle.

d. TYRE ROTATION

Dismantling one wheel from one position and fit it to the identified position.

e. WHEEL RIM PAINTING

Dismantling tyre from the wheel rim, clean the rim properly using emery paper or wire brush, apply primer coating and applying two coat of enamel paint.

2.3 Washing and servicing

a. Servicing

Servicing shall include washing and cleaning the vehicles inside and outside using brush, liquid soap, detergent etc. Spraying of oil on under chassis and in engine compartment, greasing of all lubrication points

b. Washing.

Washing shall include washing vehicle's outside body using soap oil or Teepol, cleaning the vehicle inside using brush and cleaning wheels etc.

c. Greasing

Greasing shall include greasing of all lubrication point of the vehicles

d. Vehicle interior cleaning.

Cleaning the vehicle's interior including seat and roof using cotton waste or vacuum cleaner.

2.4 Fuel pump operation and Vehicle fueling

The operator has to fill the fuel in vehicles that are coming to the filling station, monitor the readings of dispenser, tabulate the mileage of each vehicle, preparing petrol/diesel issue statement, maintaining required registers, unloading diesel from tanker etc.

3. WORK UNITS & COMPUTATION

One work unit is defined as one hour duration of work per person and the total quantum of work carried out will be computed on monthly basis based on the completed work unit. The Service provider shall be available for work not only during office hours but also during late office hours and on holidays if needed.

4. MANPOWER REQUIREMENT (Table -1)

SI No	Designation	No of personnel required Total	Work units required
1	Supervisor	1	4992
2	Mechanical Maintenance technician	6	29952
3	Body shop work technicians	3	14976
4	Electrical maintenance technicians	2	9984
5	Helper (Tyre repairing personnel)	1	4224
6	Helper (Vehicle washing and servicing personnel)	3	12672
7	Helper (Fuel pump operator)	1	4992
	Total	17	81792

5. QUALIFICATION AND EXPERIENCE REQUIRED FOR THE MAN POWER (TABLE 2)

SL No	Designation	<u>Qualification</u>	No of personnel required	Experience in the relevant field
1	Supervisor	Diploma in Mechanical Engineering/Automobile engineering	01	2 years
2	Mechanical maintenance technicians	Government approved ITI/ITC in Diesel mechanic / Motor mechanic.	07	2 years
3	Body shop work technicians	Government approved ITI/ITC in Sheet metal		2 years
4	Electrical maintenance technicians	Government approved ITI/ITC in Auto electrician / Motor Mechanic/ Diesel Mechanic	1	2 years
5	Helper for Tyre repairing	---	1	2 years
6	Helper for Vehicle washing and servicing personnel	---	3	2 years
7	Helper for Fuel pump operator	10th standard pass	1	2 years

Note:

- a. One year apprenticeship training in any ISRO centres or other Govt. department in relevant field shall be counted for experience.

6. ELIGIBILITY OF BIDDERS:

Bidder shall have the following eligibility criteria in addition to the prerequisite mentioned in clause no.3 of RFP

- a. The Bidder/Tenderer should have a minimum experience of two years as on 28/02/2021 in the field of providing personnel on Contract Basis for the maintenance of vehicles. Submit a copy of PO/Contract agreement.

7. UNIFORM, LIVERIES :

- a. The Service provider shall arrange to issue 02 sets of uniform (Shirts and pants) every year to all of the personnel deputed. The color and quality of the uniform shall be as decided by the Department.
- b. The Service provider shall arrange to issue 01 sets of safety shoe with two set of socks every year to all of the personnel deputed.
- c. Service provider shall issue two soap (One bathing soap & Washing soap) on monthly basis to all of the personnel deputed.
- d. Service provider should enforce wearing of clean uniform by his/her contract personnel during working time. No additional payment shall be made by the department for issuing uniforms, safety shoes & socks, soaps, bathing towels etc.

8. Execution of Contract:

- a. After finalizing the contract, the service provider shall deploy requisite work force to LPSC/TOMD facility on all working days /as and when required from 08.45 to 05.15 PM (with half an hour lunch break)and to attend the maintenance works as instructed by the contact person in TOMD.
- b. The contact person or his representative from TOMD will assign the details of works to be carried out to service provider's supervisor. All interaction shall be routed only through service provider's supervisor.
- c. The service provider's supervisor shall allot the work to his personnel.
- d. All the spare parts, tools required for the maintenance work shall be provided by the department.
- e. All the tools, equipment and consumables required for washing & servicing shall be provided by the department.
- f. The work shall be executed by the service provider's personnel under the supervision and control of the service provider's supervisory staff. All the repair work shall be completed within the stipulated time and as instructed by the contact person.
- g. If required, the service provider shall deploy required work force on holidays and beyond normal working hours for meeting the emergency requirement as instructed by the contact person.
- h. If any of the department vehicle is met with an accident or breakdown beyond the office hours, the service provider shall arrange to recover the vehicle from the spot to LPSC Valiamala.
- i. If required the Department shall provide necessary conveyance facility to attend the works outside the campus.

- j. The technicians shall be available on full day basis at the area where duty is assigned to them.
- k. Service provider shall ensure that the persons positioned/deputed for the work are attending the duties regularly without any complaint.
- l. The service provider's supervisor shall available on phone call to attend the any emergency work beyond office hours and on holidays.

9. Tools, spare parts and consumables.

- a. Necessary tools and equipment and facilities required for the maintenance work, tyre repairing work, washing, servicing and greasing shall be provided by the department.
- b. All the spares parts and consumables required for the said work shall be supplied by Department.
- c. If required, the service provider can provide additional tools and personal protective items for doing the said work.
- d. List of equipment, tools and other facilities available in TOMD are listed in **Annexure F**

10. Responsibility of Service provider.

- a. The Service provider shall make his own arrangements for lodging and medical facilities of his personnel.
- b. The Service provider shall make their own arrangement for transportation of his staff for reaching the work spot well in time.
- c. If any of the Vehicles given for repair is damaged due to the negligence or carelessness of the contract staff, the entire loss thus caused to the department shall be recovered from the service provider(form Security Deposit or from the monthly payment).

11. Responsibility of supervisor :

- a) The supervisor shall report the duty place in time. .
- b) The supervisor shall always wear neat and tidy uniform while on duty.
- a) Coordinating with contact person or authorized representative of TOMD regarding the work requirements.
- b) Allotting/ assigning and informing the duty details to the concerned personnel.
- c) Ensuring the timely reporting of the personnel deployed and execution of duty as per the duty schedule.
- d) Maintaining attendance register, Preparation and submission of duty statement and Work unit performed by the technicians on day to day basis to the Operation In Charge.
- e) Preparation and submission of duty statement and Work unit performed by the technicians on monthly basis to the Operation In Charge.
- f) Logging of maintenance details of each vehicles on day to day basis.

- g) Logging of vehicle maintenance data in vehicle maintenance software.
- h) The supervisor shall be available round 'o' clock to meet the emergency and breakdowns.

12. Responsibility of Technicians :

- a) The technicians shall report the designated duty place at right time.
- b) The technicians shall always wear neat and tidy uniform while on duty.
- c) The technicians shall always keep their Identity Card issued by the service provider and the entry pass issued by LPSC while on duty.
- d) The technicians shall be ready to take duty on round 'o' clock basis to meet the emergency.

13. Responsibility of LPSC

- a. LPSC shall provide office PC & Printer and requisite office stationary for recording of maintenance activities.

ANNEXURE – H
FINANCIAL BID

1.	Name & address of the tenderer	
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2.	Name of Contact Person with Contact details including e-mail id		
3.	FINANCIAL OFFER		
	Particulars	In figure	In Words
3.1	Rate per work unit for deploying Supervisor on contract basis.		
3.2	Rate per work unit for deploying Mechanical maintenance technicians on contract basis.		
3.4	Rate per work unit for deploying Body shop work technicians on contract basis.		
3.5	Rate per work unit for deploying Electrical maintenance technicians on contract basis		
3.6	Rate per work unit for deploying Helper (Tyre repairing person) on contract basis.		
3.7	Rate per work unit for deploying Helper (Vehicle washing and servicing personnel)on contract basis.		
3.8	Rate per work unit for deploying Helper (Fuel pump operator) on contract basis.		
	Grand total		

4. Inclusions:

The rates offered / agreed by the tenderer shall be inclusive of Capital Cost, man power cost (Technicians and Contract Mangers), their logistic, medical expenses, accommodation, ID cards, Uniforms and leveries, mandatory social security and other benefit conforming to state and central labor laws and other labor laws, Service Charge/Profit etc.

5. Exclusions:

The GST, Kerala flood cess, educational cess or any other taxes imposed by the government time to time. (Will be paid/reimbursed as per prevailing GST rules).

6. Validity of Rates:

Rates agreed to in the Contract shall remain firm for entire contract period including extensions, if any and no request whatsoever for further price escalation on any ground will be entertained during the Contract period.

7. Undertaking:

- a) We have carefully gone through and have understood the General Terms & Conditions, Work scope and Specifications governing the tender and would abide by the same.
- b) The Financial Bid will be valid for 120 days from the date of opening of Technical Bid Part-A.
- c) I hereby confirm that I am authorized to sign the tender document.
- d) All the pages of the Financial Bid (Annexure-) i.e. Page 1 to any overwriting are signed.

Date:

(Signature of Authorised Signatory with Seal)

Place:

Name if full:

ANNEXURE F

- 1) **List of vehicles, Tools & Facility details approximate work to be carried out per year.**

Sl no	Category of vehicles	Make	Number of vehicles
1	Bus	Ashok Leyland	36
2	Truck (Closed & Open)		3
3	Mini Bus	SML	3
4	Lynx Mini bus	Ashok Leyland	2
5	Tata 709	Tata	2
6	Tata 407		3
7	Tata 207	Tata	1
8	Tata Ace		2
9	Dost	Ashok Leyland	2
10	Bolero Camper	Mahindra	1
11	Fiesta	Ford	2
12	Etios	Toyota	2
13	SX4	Maruti Suzuki	2
14	Ciaz		2
15	Optra Magnum	GM	1
16	Innova	Toyota	17
17	Thar	Mahindra	1
18	Bolero		1
19	Bullet	Enfield	3
20	Glamour	Hero	2
21	Traveller	force motors	10

2) Tools, Equipment & Facility available in TOMD

Sl no	Tools/Equipment	Nos
1	Heavy vehicle maintenance bay	5
2	Light vehicle maintenance bay	4
3	Overhauling room	2
4	Two post lift for LV	2
5	Four post lift for LV	1
6	Leaf recambering machine	1
7	Gear box jack for HV	2
8	Gear box telescopic jack for LV	1
9	Trolley jack 5 ton	3
10	Trolley jack 10 ton	3
11	Trolley jack 3 ton	3
12	Hydraulic press 20 ton	1
13	Tools crib having sufficient number of general tools like spanners, hammers, screwdrivers etc.	

14	Pneumatic power tools	
15	All heavy and light vehicle bays are provided with pneumatic line for pneumatic power tool applications	

3) Mechanical Maintenance of Heavy vehicles

Sl.No	Work description	Unit	Work quantity/year			
			Bus	Truck	709	Lynx
1	Engine oil & oil filter changing	Nos	48	12	12	2
2	Diesel filter changing	Nos	48	12	12	2
3	Air filter cleaning/ replacing	Nos	72	12	12	2
4	Diesel pre-filter cleaning/ replacing	Nos	72	12	12	12
5	FIP removing & refitting	Nos	5	1	1	1
6	FIP timing adjusting	Nos	5	1	1	1
7	Valve cover gasket replacing	Nos	5	1	2	1
8	Intake/exhaust manifold gasket replacing	Nos	5	1	2	1
9	Exhaust pipes/manifold removing/refitting	Nos	24	12	12	1
10	Fuel lines cleaning/ replacing	Nos	120	24	12	12
11	Intake air lines cleaning/ replacing	Nos	120	24	12	12
12	Accelerator linkage overhauling	Nos	96	24	24	12
13	Water pump overhauling/replacing	Nos	12	1	2	1
14	Engine thermostat removing/refitting	Nos	12	1	2	1
15	Radiator/intercooler removing/refitting	Nos	12	1	2	1
16	Coolant hose replacing	Nos	120	24	12	12
17	Fuel feed pump overhauling/replacing	Nos	24	2	2	1
18	Speed governor linkage/system overhauling	Nos	120	24	2	1
19	Fuel high pressure pipe removing/refitting	Nos	12	12	2	2
20	Air compressor head overhauling	Nos	5	1	2	2
21	Air compressor unit overhauling	Nos	1	1	1	1
22	Valve clearance adjusting	Nos	5	1	1	1
23	Fan belt adjusting/removing/refitting	Nos	120	24	24	24

24	Radiator fan clutch removing/refitting	Nos	12	1	0	0
25	Radiator flushing & cleaning	Nos	12	1	2	2
26	Engine crank oil seal removing/refitting	Nos	3	1	2	2
27	Engine minor overhauling	Nos	5	0	1	1
28	Engine major overhauling	Nos	1	0	1	1
29	Engine cylinder head re-torquing	Nos	5	1	1	1
30	Engine mountings replacing	Nos	12	1	2	2
31	Fuel tank cleaning/refitting	Nos	12	1	2	2
32	Power steering oil & filter replacing	Nos	24	1	2	2
33	Power steering pump removing/refitting	Nos	3	1	1	1
34	Steering gear box removing/refitting	Nos	3	1	1	1
35	Steering linkages/ball joints overhauling/replacing	Nos	24	24	4	2
36	Steering shaft & wheel overhauling/refitting	Nos	12	1	1	1
37	Wheel alignment checking & adjusting	Nos	24	1	1	2
38	Wiper motor assyovrhauling/replacing	Nos	120	0	0	0
39	Wiper pneumatic switch overhauling/replacing	Nos	120	0	0	0
40	Door pneumatic switch overhauling/replacing	Nos	60	0	0	0
41	Pneumatic lines removing/refitting/replacing	Nos	180	0	12	0
42	Hydraulic lines removing/refitting/replacing	Nos	60	36	12	12
43	Hydraulic system air bleeding	Nos	60	12	12	12
44	Door operating cyliner removing/overhauling/refitting	Nos	12	0	0	0
45	Clutch linkage adjusting/overhauling	Nos	180	24	12	12
46	Clutch M/C overhauling/replacing	Nos	0	0	2	2
47	Clutch slave cylinder overhauling/replacing	Nos	0	0	2	2
48	Unloader valve overhauling/replacing	Nos	24	3	2	2
49	Dual brake valve overhauling/replacing	Nos	60	3	2	2
50	System protection valve valve overhauling/replacing	Nos	60	3	2	2
51	Hand brake valve overhauling/replacing	Nos	60	2	2	2
52	Quick release valve overhauling/replacing	Nos	24	2	1	1
53	Brake air lines removing/refitting	Nos	180	12	24	24

54	Fr brake chamber overhauling	Nos	24	2	2	2
55	Rr brake chamber overhauling	Nos	24	2	2	2
56	All wheel brake liner dust cleaning and brake adjusting	Nos	240	48	48	24
57	Wheel drum removing & brake liner replacing	Nos	24	2	2	2
58	S cam overhauling/ replacing	Nos	24	2	1	1
59	Slack adjuster removing/refitting	Nos	24	2	1	1
60	4 wheel hub greasing	Nos	48	3	2	2
61	Fr wheel king pin overhauling	Nos	12	1	1	1
62	Axle packing cleaning & replacing	Nos	60	12	24	24
63	Leaf spring assembly removing,cleaning bush changing,re-cambering	Nos	48	3	2	2
64	Leaf spring broken replacing	Nos	12	1	2	2
65	Leaf spring side washer replacing	Nos	60	12	2	2
66	Shock absorber removing/refitting	Nos	60	12	12	12
67	Shock absorber bush changing	Nos	60	12	12	12
68	Air suspension stabilizer bush replacing	Nos	12	0	0	0
69	Clutch assy overhauling	Nos	3	1	1	2
70	Gear oil changing	Nos	24	3	2	2
71	Gear box oil seal replacing	Nos	3	1	1	2
72	Gear box top overhauling	Nos	24	12	12	2
73	Gear box major overhauling	Nos	2	1	1	1
74	Gear lever linkage overhauling/replacing	Nos	48	24	12	24
75	Gear box mountings replacing	Nos	12	1	1	2
76	Propeller shaft UJ cross overhauling	Nos	24	12	2	2
77	Propeller shaft slip joint overhauling	Nos	24	12	2	2
78	Propeller centre bearing overhauling/replacing	Nos	24	12	2	2
79	Differential pinion oil seal replacing	Nos	12	1	1	2
80	Differential housing packing replacing	Nos	24	1	1	1
81	Differential oil changing	Nos	24	3	2	2
82	Differential play adjusting	Nos	12	1	1	2
83	Differential unit overhauling	Nos	3	1	1	1

84	Rr axle shaft removing/refitting	Nos	120	12	12	12
85	General check-up	Nos	120	24	24	12
86	Any other activity required for the proper upkeep of the vehicle.		As and when called for.			

Mechanical Maintenance of Light vehicles

Sl.No	Work description	Unit	Work quantity/year				
			Innova/ Car	Traveller	407	Dost	2 wheeler
1	Engine oil & oil filter changing	Nos	24	12	3	2	12
2	Fuel filter changing	Nos	24	12	3	2	12
3	Air filter cleaning/ replacing	Nos	24	12	3	2	12
4	FIP removing & refitting	Nos	0	3	1	2	0
5	FIP timing adjusting	Nos	12	3	1	2	0
6	Engine timing belt replacing	Nos	12	0	0	1	0
7	Engine timing chain replacing	Nos	0	2	0	0	24
8	Valve cover gasket replacing	Nos	12	12	1	2	0
9	Intake/exhaust manifold gasket replacing	Nos	12	12	1	2	2
10	Exhaust pipes/manifold removing/refitting	Nos	12	12	1	2	2
11	Fuel lines cleaning/ replacing	Nos	12	12	12	4	12
12	Intake air lines cleaning/ replacing	Nos	12	12	12	2	12
13	Accelerator linkage/cable overhauling	Nos	0	24	12	3	24
14	Speed governor linkage/system overhauling	Nos	0	12	2	48	0
15	Water pump overhauling/replacing	Nos	1	1	2	3	0
16	Engine thermostat removing/refitting	Nos	1	1	2	3	0
17	Radiator/intercooler removing/refitting	Nos	3	2	2	2	0
18	Coolant hose replacing	Nos	24	12	12	12	0
19	Fuel feed pump overhauling/replacing	Nos	12	12	2	2	0
20	Fuel high pressure pipe removing/refitting	Nos	12	12	1	2	0
21	Valve clearance adjusting	Nos	1	3	1	1	12
22	Fan belt adjusting/removing/refitting	Nos	2	12	12	12	0

23	Radiator fan clutch removing/refitting	Nos	0	0	0	0	0
24	Radiator flushing & cleaning	Nos	2	12	3	2	0
25	Engine crank oil seal removing/refitting	Nos	1	3	2	2	12
26	Engine minor overhauling	Nos	1	2	1	2	3
27	Engine major overhauling	Nos	0	2	1	1	1
28	Engine cylinder head re-torquing	Nos	1	2	1	1	0
29	Engine mountings replacing	Nos	2	3	1	2	0
30	Fuel tank cleaning/refitting	Nos	4	12	2	1	2
31	Power steering oil & filter replacing	Nos	2	12	3	1	0
32	Power steering pump removing/refitting	Nos	0	1	1	1	0
33	Steering gear box removing/refitting	Nos	0	2	0	1	0
34	Steering linkages/ball joints overhauling/replacing	Nos	12	12	3	2	0
35	Wheel alignment checking & adjusting	Nos	4	12	3	2	0
36	Hydraulic lines removing/refitting/replacing	Nos	24	12	12	3	0
37	Clutch M/C overhauling/replacing	Nos	2	12	12	2	0
38	Clutch slave cylinder overhauling/replacing	Nos	2	12	3	2	0
39	All wheel brake liner dust cleaning and brake adjusting	Nos	36	36	12	12	12
40	Wheel drum removing & brake liner replacing	Nos	12	12	3	3	3
41	Hand brake system overhauling	Nos	2	24	12	12	0
42	Hydraulic system air bleeding	Nos	12	12	12	24	0
43	Wheel hub greasing	Nos	12	12	3	4	0
44	Fr wheel king pin overhauling	Nos	0	1	0	0	0
45	Fr side upper arm and lower arm ball joint changing/overhauling	Nos	24	0	0	1	0
46	Front both side caliper overhauling	Nos	12	12	0	3	0
47	Fr both side brake pads replacing	Nos	12	12	0	3	0
48	Axle packing cleaning & replacing	Nos	0	12	12	0	0
49	Leaf spring assembly removing,cleaning bush changing,re-cambering	Nos	0	24	3	4	0
50	Leaf spring broken replacing	Nos	0	3	2	2	0
51	Leaf spring side washer replacing	Nos	0	3	3	2	0
52	Shock absorber removing/refitting	Nos	24	12	12	12	0

53	Shock absorber bush changing	Nos	24	12	12	12	0
54	Clutch assy overhauling	Nos	3	2	1	2	3
55	Gear oil changing	Nos	2	2	3	2	3
56	Gear box oil seal replacing	Nos	0	1	1	1	0
57	Gear box major overhauling	Nos	0	1	1	1	3
58	Gear lever linkage overhauling/replacing	Nos	1	36	1	12	3
59	Gear box mountings replacing	Nos	1	12	1	2	0
60	Propellor shaft UJ cross overhauling	Nos	3	12	2	2	0
61	Propellor shaft slip joint overhauling	Nos	3	12	2	2	0
62	Propellor centre bearing overhauling/replacing	Nos	3	12	2	2	0
63	Differential pinion oil seal replacing	Nos	1	3	2	2	0
64	Differential housing packing replacing	Nos	0	3	2	2	0
65	Differential oil changing	Nos	3	3	3	2	0
66	Differential play adjusting	Nos	0	1	1	0	0
67	Differential unit overhauling	Nos	0	1	1	0	0
68	Drive shaft removing/refitting	Nos	3	3	3	1	0
69	Drive chain & sprocket adjusting/overhauling/replacing	Nos	0	0	0	0	3
70	Carburettor cleaning	Nos	0	0	0	0	4
71	Fr fork overhauling	Nos	0	0	0	0	2
72	General check-up	Nos	48	48	12	48	48
73	Any other activity required for the proper upkeep of the vehicle		As and when called for.				
34944 Work unit is required to perform mechanical maintenance work of Department vehicles							

Electrical maintenance of vehicles

Sl.No.	Work description	Unit	Work quantity/year	
			Heavy	Light
1	Fuse/relay replacement	Nos	300	120

2	Fuse carrier fitting	Nos	300	120
3	Battery maintenance	Nos	360	120
4	Battery bench charging	Nos	120	120
5	Battery electrolyte making	Nos	240	120
6	Vehicle jump starting	Nos	120	120
7	Light assembly fitting	Nos	120	120
8	Light glass cover removin/refitting	Nos	180	120
9	Vehicle body marking light fitting/replacing	Nos	240	120
10	Beackon light removing/refitting	Nos	0	240
11	Siren removing/refitting	Nos	0	240
12	Flasher unit fitting/replacing	Nos	120	240
13	Buzzer removing/refitting	Nos	120	240
14	Bulb replacing	Nos	240	60
15	Switch fitting/overhauling/replacing	Nos	180	60
16	Wiper motor repair/replacing	Nos	120	12
17	Wiper blade replacing	Nos	180	60
18	Wiper arm replacing/overhauling	Nos	180	12
19	Windshield washer motor/nozzle repair	Nos	60	120
20	Head lamp aiming	Nos	60	60
21	Horn fitting	Nos	60	60
22	Horn tuning	Nos	60	60
23	Alternator overhauling	Nos	36	24
24	Starting motor overhauling	Nos	36	24
25	Starter solenoid replacing/overhauling	Nos	36	24
26	Regulator/rectifier replacing	Nos	36	24
27	Panel gauge replacing	Nos	120	24
28	Battery cut-off switch fitting/overhauling	Nos	60	24
29	Cabin fan brush replacing	Nos	120	120
30	Cabin fan replacing	Nos	36	12
31	Ignition switch replacing/overhauling	Nos	60	60
32	Brake light/reverse switch replacing	Nos	120	24

33	Electrical sensor cleaning/replacing	Nos	120	24
34	Combination switch overhauling/replacing	Nos	120	24
35	Speed governor circuit checking/repair/replacing	Nos	60	24
36	Fuel tank float unit overhauling/replacing	Nos	60	24
37	A/C cooling low checking	Nos	12	60
38	Wiring circuit checking/repair	Nos	120	60
39	Accessories fitting	Nos	60	60
40	Full electrical check-up	Nos	180	180
41	Any other activity required for the proper upkeep of the vehicle		As and when called for.	
9984 Work unit is required to perform Electrical maintenance work of Department vehicles				

6) Sheet metal / Body shop /General fabrication work

Sl.No	Work description	Unit	Work quantity/year	
			Heavy	Light
1	Door pad removing/correcting/refitting	Nos	60	60
2	Door/bonnet lock overhauling/replacing	Nos	24	24
3	Battery box refurbishing	Nos	48	12
4	Mud guard making/repairing	Nos	36	12
5	Bumper corner denting	Nos	96	48
6	Side body denting	Nos	96	12
7	Side body tinker talc applying	Nos	96	12
8	Side body sanding &levelling	Nos	96	12
9	Side body sheet replacing	Nos	12	12
10	Rr bumper patchwork	Nos	36	48
11	Silencer clamp welding	Nos	60	24
12	Muffler body rusted part repairing	Nos	24	12
13	Window glass handle replacing	Nos	12	24
14	Window glass removing/refitting	Nos	48	24
15	Window glass channel replacing	Nos	48	12

16	Top bonding glass removing/refitting	Nos	48	0
17	Fr windshield removing/refitting	Nos	4	1
18	Rr windscreen removing/refitting	Nos	2	1
19	Side view mirror removing/refitting	Nos	96	48
20	Side view mirror post leveling	Nos	48	24
21	Top sealant applying	Nos	60	0
22	Top tar felt applying	Nos	36	24
23	Body frame member removing/repairing	Nos	24	12
24	Wheel cup fitting	Nos	24	12
25	Rr emergency exit window repairing	Nos	48	0
26	Door/bonnet show beading removing/refitting	Nos	48	24
27	Seat frame levelling/welding	Nos	36	48
28	Seat adjusting mechanism repairing	Nos	36	48
29	Seat belt removing/repairing	Nos	0	36
30	Passenger seat removing/refitting	Nos	48	48
31	Underbody platform rescrowing/riveting	Nos	48	48
32	Platform/loadbody repair	Nos	48	48
33	Loadbody side hinges removing/repairing	Nos	24	48
34	Loadbody side opening removing/refitting	Nos	24	48
35	Accessories fitment bracket making	Nos	12	24
36	Gear lever boot repairing/refitting	Nos	24	36
37	Pedal boot replacing	Nos	12	12
38	Dashboard dismantling & assembling	Nos	0	24
39	Door glass winder mechanism overhauling/replacing	Nos	24	48
40	Door opening shockabsorber correcting/replacing	Nos	12	12
41	Anti rust coating applying	Nos	48	12
42	Floor vinyl sheet laying	Nos	0	24
43	Side body reflector tape fixing	Nos	48	24
44	Number board removing/refitting	Nos	48	12
45	Number board new making	Nos	12	12
46	Aluminium key chain making	Nos	24	24

47	Fr grille/bumper removing/refitting	Nos	24	36
48	Fuel tank cap repair	Nos	0	48
49	Metal pipe brazing	Nos	120	120
50	Wiper arm welding	Nos	60	12
51	Battery cut-off switch bracket making	Nos	12	12
52	Battery terminal molding	Nos	24	12
53	Battery terminal lead making	Nos	24	12
54	Miscellaneous electrical soldering	Nos	180	180
55	Miscellaneous welding	Nos	180	180
56	Miscellaneous sheetmetal work	Nos	120	120
57	Miscellaneous riveting	Nos	180	180
58	Vehicle full body reconstruction	Nos	06	2
59	Vehicle alteration and modification work	Nos	2	05
60	Any other activity required for the proper upkeep of the vehicle		As and when called for.	
61	General fabrication work.		As and when called for	
14976 Work unit is required to perform Sheet metal / Body shop /General fabrication work of Department vehicles				

7) Washing/servicing and greasing of Department vehicles

Description	Approximate number of vehicles required to be washed/greased/serviced			
	Per day.	Per Month	For one Year	For two year
Servicing				
Bus	1	22	264	528
Innova/Car	1	22	264	528
Greasing				
Bus	3	66	792	1584
washing				

Bus	8	176	2112	4224
Innova	13	286	3432	6864
Car	6	132	1584	3168
Traveller	3	66	792	1584
Mini truck	1	22	264	528
Mini Bus	1	22	264	528

12676 Work unit is required to perform washing/servicing and greasing of Department vehicles

8) Tyre repairing work

I	Approximate number works to be carried out in two year				
	SI no	type of vehicles and tyre sizes .	Tyre changing/ side changing	Tyre puncture repairing	Tyre rotation
B		Heavy Truck , Tyre Size: 10.00 X 20	12	10	4
C		Bus, Tyre Size: 295/70 R22.5 Tubeless type	8	4	4
D		Bus, Tyre Size: 10.00 R 20	24	10	10
E		Bus, Tyre Size: 9.00 X 20	360	160	80
F		Ley land Lynx , Tyre size: 235/75 R 17.5 Tubeless	8	4	20
G		Ley land Lynx , Tyre size: 8.25 X 20	16	10	15
H		Mini bus/ Mini Truck, Tyre Size: 7.50 X 16	24	40	30
I		Tempo Traveller,Bolero ,Tata Xenon similar type vehicles Tyre Size: 215/75 R 14,215/75 R 15, 215/75 R 16	60	40	40
J		Innova /Innova Crysta similar type vehicles.Tubeless type Tyre Size: 205/65 R 15,205/65 R 16, 6.00 X 16	160	40	40
K		Innova /Innova Crysta similar type vehicles Tyre Size: 205/65 R 15,205/65 R 16, Tubeless	20	10	20
L		SX4 , Optra Magnum, Etios, Ciaz. Tube less type tyre . Tyre size: 195 / 60 R 15,205 /60 R 16,185/60 R 15,185/65 R15	80	40	20
M		Tata Ace, Tyre size : 145 / 80 R 12 Tubeless type	16	4	8

N	Leyland Dost,Tyre size : 185 R 14 Tubeless type	16	4	10
O	Tata 207,Bolero Camper ,Thar . Tyre size : 7.00 X 16, 235/75R15, 6.00 X 16.	24	4	8
P	Bullet, Hero Glamour, Tyre size 3.25 x 19,2.75 X18,3.00 x 18	20	16	2
Q	Fork Lift 16 Ton, Tyre size 12.00 X 20	4	10	2
R	Fork Lift 10 Ton, Tyre size 9.00 X 20	4	2	2
S	Fork Lift 5 Ton, Tyre size : 7.50 x 16, 7.00 x 12	4	2	2
T	Fork Lift 3 Ton, Tyre size: 6.50 x 10, 7.00 x 12	4	2	2
<u>WHEEL RIM PAINTING:</u>				
	Type of vehicle and tyre sizes	Apro. Qty. for two year		
a	Prime mover, Trailer,Bus ,Truck Fork lift Tyre size : 12.00X20,10.00X20,9.00X20,295/70 R22.5	200		
b	Mini bus/ Mini Truck/Fork lift; Tyre Size: 7.50 X 16,7.00 X 16, 235/75 R 17.5,8.25 x 20	45		
c	Qualis/Innova / Tavera/Tempo Traveller. Tyre Size: 175 R 14 , 205/65 R 15,215 R 14/ 215/75 R 15	100		
d	SX4 , Optra Magnum, Etios, Ciaz Tyre size : 195 / 60 R 15,205 /60 R 16,185/60 R 15,185/65 R 15.	50		
e	Leyland Dost,Tata Ace, Fork lift. Tyre size : 185 R 14, 145 / 80 R 12,7.00 x 12,6.50 x 10	25		
f	Bullet, Hero Glamour Tyre size 3.25 x 19,2.75 X18,3.00 x 18	20		
<u>TYRE INFLATION</u>				
	Type of vehicle and tyre sizes	Apro. Qty. for two year		
a	BUS	450		
b	Trailer, Prime mover, Truck, similar type vehicle	50		
c	Mini truck, Minibus ,similar type vehicle	80		
d	Traveller, Bolero similar type vehicle	125		
e	Innova, Thar ,similar type vehicle	250		
f	Ciaz, Optra Magnum, SX4 similar vehicle	130		
g	Bullet, Hero Glamour , similar type vehicles	80		
4224 Work unit is required to perform Tyre repairing work of Department vehicles				

9)
