

Government of West Bengal
Technical Education, Training and Skill Development Department
Directorate of Industrial Training
Karigari Bhawan (2nd Floor)
B/7 Action Area –III, Newtown, Rajarhat, Kol-160

Memo No. 5A-1/135/2018/870

Date: 14.06.2018

Corrigendum Notice

As per resolution taken in the Pre-Bid meeting, held on 13.06.2018, the following decisions were taken in connection with the e-Tender Notification Vide No. DITWB/HQ(CPC)/ NIT-01(e-Tender)/2017-18, Dated 06/06/2018 (Tender ID : 2018_DTET_175269_1 and 2018_DTET_175205_1, Dt. 06/06/2018)

- A) In the heading of the bid the word “New ITIs” is to be replaced by “existing ITIs”.
- B) Heading of the clause No. 10 of the bid is to be read as “ i), ii), iii) & iv) chronologically under “
a) Statutory Document, I. Technical Proposal”.
- C) Revised Schedules for A & B with blank space at extreme right hand side column is being provided for filling up of “Make/Brand/Model/IS Code/etc. “ against the items for offering rates by the bidder. Blank spaces are to be marked as “X” or “Regret” for which bidders are not willing to offer rates. All technical details / information of the quoted item are to be uploaded by the bidders.
- D) Other terms and conditions of the stated NIT will remain unchanged.
- E) The tender is being processed for finalizing standard rate for the equipment, Instrument and Machineries being used at existing Govt. ITIs with approval of TET & SD Deptt. Purchase orders would be issued to the lowest bidders by the Head of the concerned ITIs and payment would be made by them after satisfactory supplies of the items.

Sd/-
Director of Industrial Training
West Bengal

Tender Schedule - A

List of Instruments & Equipments of the different Trades

Delivery points: Various Govt. ITIs / ITCs throughout the State of West Bengal

Sl. No.	Name & Specifications of the items	Item Code	Tentative Quantity	Make/Brand/Model with specification & description of the item with IS Code/ Mark, if any, to be quoted by the Bidder
1	Combination Set 30 cm. Three measuring heads are attached to the stainless steel rule (blade), allowing versatile measurements on various types of work pieces. Square head — Used to set the rule at 90 degrees or 45 degrees to an edge of a work piece. Center head — Used to locate centres of round work pieces. Protractor head — Used to set the rule at a desired angle to an edge of a work piece. Also used for measuring angles. The measuring heads are hardened. Economy sets not including a protractor head are also available.	FT64	40 Nos.	
2	Micrometer 0 – 25 mm outside. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.002 mm.	FT65	40 Nos.	
3	Micrometer 25 – 50 mm outside. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.003 mm.	FT66	60 Nos.	
4	Micrometer 50 – 75 mm outside. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.003 mm.	FT67	40 Nos.	
5	Micrometer inside 25 - 50 mm with extension rods. Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01 mm of graduation, Accuracy of ± 0.003 mm.	FT68	20 Nos.	
6	Vernier caliper 15 cm FEATURES : Measures OD (outside diameter), ID (inside diameter), depth, and steps. The small vernier face angle (14°) provides easy reading. Dual reading scales on vernier. (metric/inch and inch models only) Lock screw for holding the sliding jaw position. Carbide-tipped jaw type callipers are also available. Supplied with vinyl holster in fitted carton. Except 600mm / 24" models are carton only. 1000mm / 40" supplied in wooden case. Technical Data Graduation: 0.05mm, 0.05mm (1/128") or .001" (1/128")	FT69	20 Nos.	

	High accuracy type : 0.02mm or 0.02mm (.001")			
7	<p>Vernier height gauges 30 cm.</p> <p>FEATURES</p> <p>The Light Weight Height Gage is designed for scribing from a vertical base or for small parts.</p> <p>Stain chrome finished scales for glare-free reading.</p> <p>Beam and slider are made of stainless steel.</p> <p>Carbide-tipped scriber is provided.</p> <p>Standard Scriber Provided</p> <p>Carbide-tipped scriber (900173) and scriber clamp (901338)</p>	FT70	20 Nos.	
8	<p>Vernier bevel protractor.</p> <p>FEATURES :</p> <p>High-precision angle gage for accurate angle measurement of machines, moulds and jigs.</p> <p>Can be attached to height gages.</p> <p>Technical Data</p> <p>Graduation:5min.(0°- 90°- 0°)</p> <p>Accuracy Vernier:±5'</p> <p>Straightness [.00016"+(.00005xL/2)]"</p> <p>Parallelism [.00016"+(.00005xL/2)]"</p> <p>L = Length in inch</p> <p>Diameter : 2.56" / 70mm</p> <p>Universal Bevel Protractor Accessories and Parts</p> <p>187-103 : 12" Blade.</p> <p>187-104 : 6" Blade.</p> <p>187-105 : Acute angle attachment</p> <p>950749 : Clamp box for Inch Height Gages</p> <p>950750 : Clamp box for Metric Height Gages</p>	FT71	20 Nos.	
9	<p>Slip Gauge as Johnson metric set.</p> <p>Metric Set , 87 pieces in a box with workshop grade</p> <ul style="list-style-type: none"> • Highly accurate, very low deviation from flatness, surface finish & nominal length • High resistance to wear & dimensionally stable • Superior wringing quality • Each gauge block is marked for size & serial number <p>Material- Ceramic/carbide/steel</p>	FTD1.	20 Sets	
10	<p>Gauge plug single 3 ended 5 to 55 by 5 mm. Set of 11 pieces.</p> <p>Manufactured according DIN 2245, 2246 and 2247.</p> <p>with Go and No Go on one handle, over 70 mm in two parts. Prices are for H7 plug gauges with Go and No Go ends in hardened steel.</p>	FTD4.	20 Sets	
11	<p>Dial test indicator .01 mm on stand</p> <p>FEATURES :</p> <p>Dial gages with a large-diameter (78mm / 3.07") graduation face to ease reading. All types come with limit pins and an outer frame clamp as standard.</p>	FTD6	20 Nos.	
12	<p>Dial vernier calliper 0 – 200 mm LCO 0.05 mm. (Universal type).</p> <p>New designed dial movement for ultra smooth sliding and</p>	FTD21.	20 Nos.	

	<p>high shock protection. Can measure OD, ID, depth, and steps. Lock screw for dial bezel and for holding the sliding jaw position . Models available with carbide-tipped OD and ID jaws. Supplied in fitted plastic case.</p>			
13	<p>Depth micrometer 0-25 mm. 0.01 mm. Ø4mm measuring rod. With measuring rod clamp. With carbide-tipped measuring rod model is available. With ratchet stop for constant force. Ø4mm measuring rod. With measuring rod clamp. With carbide-tipped measuring rod model is available. With ratchet stop for constant force. Ø4mm measuring rod. With measuring rod clamp. With carbide-tipped measuring rod model is available. With ratchet stop for constant force.</p>	FTD23	20 Nos.	
14	<p>Vernier calliper 0-150 mm. L.C. 0.02 mm. FEATURES : Measures OD (outside diameter), ID (inside diameter), depth, and steps. The small vernier face angle (14°) provides easy reading. Dual reading scales on vernier. (metric/inch and inch models only) Lock screw for holding the sliding jaw position. Carbide-tipped jaw type callipers are also available. Supplied with vinyl holster in fitted carton. Except 600mm / 24" models are carton only. 1000mm / 40" supplied in wooden case.</p> <p>Technical Data High accuracy type: 0.02mm or 0.02mm (.001")</p>	FTD24.	20 Nos.	
15	<p>Digital Micrometer 0 – 25 mm outside. L.C. 0.001 mm. FEATURES : Technical Data Accuracy : Refer to the list of specifications. Resolution : 0.001mm or .00005"/0.001mm Flatness : 0.3µm/.000012" Parallelism : 2µm/.00008" Measuring faces : Carbide tipped Display : LCD Battery : SR44 (1 pc.), 938882 Battery life : Approx. 3 years under normal use (1 year for 15-30mm / .6 - 1.2" range model)</p>	FTD25.	20 Nos.	
16	<p>Comparators stand with dial indicator LC 0.01mm : Standard 0.01mm graduation dial gauges having an outer frame with an outside diameter of 57mm. All types come with limit pins and an outer frame clamp as standard. The outer clamp and lifting lever (optional) can be attached to either the right or left side. These parts can be easily installed and removed without tools.</p>	FTD26.	20 Nos.	

	Secured adhesion between the outer frame and crystal as well as the use of an O-ring ensure countermeasures against water and oil permeation via the front face. The stem spindle is made of high-strength quench-hardened stainless steel which resists strenuous use. A carbide contact point is used. The grand gear uses stainless steel that is resistant to wear and deformation. Application of a hard coating on the surface of the crystal makes the gauge highly scratch- and chemical-resistant.			
17	Digital Vernier calliper 0-150 mm. L.C. 0.001 mm.(Optional) Technical Data : Resolution : 0.01mm or .0005"/0.01mm Repeatability : 0.01mm / .0005" Display : LCD Length standard : ABSOLUTE electromagnetic induction linear encoder Max. response speed : Unlimited Battery : Solar battery* Dust/Water protection level: IP67 *Can be used continuously above 60 lux ambient illumination. Function Origin-set, inch/mm conversion (inch/mm models) Alarm: Counting value composition error	FTD29	20 Nos.	
18	Ohm Meter; Series Type : -50/2000-ohm analog ,Large size precision in wooden housing , accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment, with knife edge pointer. (Multi range scale)	EL55A	40 Nos.	
19	Ohm Meter; Shunt Type : -50/2000-ohm analog, Large size precision in wooden housing , accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment, with knife edge pointer. (Multi range scale)	EL55B	40 Nos.	
20	Multi Meter (analog) 0 to 1000 M Ohms : (Analog, portable type) AC/DC .0-1000V, 0-10A	EL56	40 Nos.	
21	Digital Multi Meter : LCD Digital Multi Meter with leads DC 200mv -1000v,0 – 10A & AC 200mv- 750v , 0-10A, resistance 0-20 M Ω with diode test, continuity check and 3.5 digit	EL57	120 Nos.	
22	A.C. Voltmeter M.I. 0 –500V A.C : A.C. Voltmeter M.I. 0 – 250 - 500V A.C, Analog, portable box type, Large size precision in wooden housing with knife edge pointer and anti parallax mirror scale of 140mm length accuracy $\pm 1.5\%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL58	20 Nos.	
23	Milli Voltmeter centre zero 100 – 0 – 100 m volt : Analog, portable type, Large size precision in wooden housing , with knife edge pointer and anti parallax mirror scale of 140mm length. $\pm 1.5\%$, Size 300 x 200 mm height	EL59	20 Nos.	

	155 mm, Horizontal type, for table experiment.			
24	D.C. Milli ammeter 0 -500m A : 0 - 500 mA, MC Type, Large size precision in wooden housing, $\pm 1.5 \%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL60	20 Nos.	
25	Ammeter MC 0-5 A : MC Type, Large size precision in wooden housing, $\pm 1.5 \%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL61A	20 Nos.	
26	Ammeter MC 0- 25 A : MC Type, Large size precision in wooden housing, $\pm 1.5 \%$, Size 300 x 200 mm height 155 mm, Horizontal type, for table experiment.	EL61B	20 Nos.	
27	A.C. Ammeter M I type 0 - 1 A Analog, Large size precision in wooden housing , accuracy $\pm 1.5 \%$, Size 300 x 200 mm height 155 mm, with knife edge pointer and anti parallel mirror scale of 140mm length, Horizontal type, for table experiment.	EL62A	20 Nos.	
28	A.C. Ammeter M I type 0-5 A Analog, Large size precision in wooden housing , accuracy $\pm 1.5 \%$, Size 300 x 200 mm height 155 mm, with knife edge pointer and anti parallel mirror scale of 140mm length, Horizontal type, for table experiment.	EL62B	20 Nos.	
29	A.C. Ammeter M I type 0-25 A, Analog, Large size precision in wooden housing , accuracy $\pm 1.5 \%$, Size 300 x 200 mm height 155 mm, with knife edge pointer and anti parallel mirror scale of 140mm length, Horizontal type, for table experiment.	EL62C	20 Nos.	
30	Kilo Wattmeter 0-1-3 kw : Dynamometer type, 0-1.5-3KW, pressure coil rating- 240v/440v, current rating-5A/10A Analoge, Large size precision in wooden housing , accuracy $\pm 1.5 \%$, Size 300 x 200 mm height 155 mm, Scale - DPDC , Horizontal type, for table experiment.	EL63	20 Nos.	
31	A.C. Energy Meter, Single phase 5 amp. : AC Single Phase, 5 - 10 A, 240 V, 50 Hz, induction type, 900 Rev/Kwh	EL64A	20 Nos.	
32	A.C. Energy Meter, Three Phase 15 amp : AC Three Phase, 5 - 15 A, 415 V, 50 Hz, induction type, 900 Rev/Kwh	EL64B	20 Nos.	
33	Power Factor Meter : Analog portable box type Electro dynamo meter instruments used in single phase /three phase, current rating 5/10A, voltage rating 125/250/500v. 1-0-1 lead and lag. Horizontal type, for table experiment.	EL65	20 Nos.	
34	Frequency Meter : vibrating reed type 40 to 55 Hz, 110/220/440 v Ac ,Large size precision with engineering plastic housing .Horizontal type, for table experiment.	EL66	20 Nos.	
35	Flux meter : 0.1 - 200 μ T(micro Tesla), Accuracy : $\pm (3\% \text{ rdg} + 3\text{dgt})$ at 50 Hz/60Hz, Frequency Response : 30Hz - 400 Hz, Max Hold/ Data Hold, Battery : 9 volt X 1, Over range : "OL" display, sampling Rate : 2.5 times/sec.	EL67	20 Nos.	
36	Wheat Stone Bridge with galvanometer and battery : Range : 0.001 ohms to 11.11 Mega ohm, provided with manganine / constantan coil with accuracy $\pm 0.05\%$,	EL68	20 Nos.	
37	DC Power Supply 0-30V, 2 amp : Input : 200-240AC Volts. continuously variable , digital readout with LED display for current and voltage . Ammeter & Voltmeter provided on	EL70	20 Nos.	

	both side with sophisticated cabinet consisting of Terminal Box .			
38	1 Phase Variable Auto Transformer : Input voltage 240 V Ac , 50 Hz , out put Voltage 0 - 270 V Ac , 10Amp & 0-5Amp. (Air cooled).	EL72	20 Nos.	
39	Battery Charger : Input : 240 volt , 1phase AC, 50Hz, Output voltage : 12 V ,24 V, 5Amps to 20 Amps . With suitable ammeter , voltmeter , selector switch , Battery connecting Terminals , MCBs.	EL73	20 Nos.	
40	Fire Extinguisher CO2 Specification :- Capacity : 22.5Kg, Discharge time : 20sec - 60sec, Gas storage pressure-50kgf/Sq.cm., Operation method : Upright, Tem. Range: 27±5 degree C, Test pressure : 250 kgf/sq.cm.	EL77	40 Nos.	
41	Tachometer : Digital Type, RPM- 2 to 99999 rpm, resolution - 0.1 rpm(2 to 999.9 rpm) and 1 rpm (over 1000 rpm), 5 digit LCD Display , accuracy + 0.05 % , Detecting distance - 50mm to 500mm, power supply 9 v battery , time base - Quartz crystal.	EL79	20 Nos.	
42	Current Transformer - 415 Volt,50 Hz, CT Ratio 150 /5Amp, 5VA : measuring up to 150amps, ratio 150/5A. 5VA/15VA, class-1/0.5 Resin cast type.	EL80	20 Nos.	
43	Potential Transformer - 415 Volt, 50Hz, PT Ratio 11KV/110V, 10VA	EL81	20 Nos.	
44	Growler : 230 V, 50 Hz, Single Phase, Adjustable jaws, Testing armature with ampere meter and testing probes.	EL82	20 Nos.	
45	Tong Tester / Clamp Meter 0 – 100 amp. AC : multi function for ACA, ACV, DCA,DCV<OHMS etc, LCD display, Dimension HWD-230 x 70 x 36mm	EL83	20 Nos.	
46	Megger 500 volts : Hand driven ,Analog - 500 V/1000 V DC complete with wearing carry case	EL84	20 Nos.	
47	Load Bank 5 KW(Lamp / heater Type) : Variable Load Bank 5 KW, 240V (Lamp / heater Type) with controlled switch and main switch	EL89	20 Nos.	
48	Brake Test arrangement with two spring balance 0 to 25 kg, 500 gm rating.	EL90	20 Nos.	
49	Voltage Stabiliser Input : 150 – 230 volt AC Output : 220 volt AC : capacity : 1KVA, AC Output - 240 V, 50 Hz, 10A, air cooled , Auto/manual selectivity, overload capacity - 110% for 10 minutes, With suitable ammeter , voltmeter , selector switch , Battery connecting Terminals , MCBs.	EL93	20 Nos.	
50	3- point D.C. Starter: For 2.5 kw DC motor, 8-10A.220V, DC with sophisticate cabinet. Portable type.	EL94	20 Nos.	
51	4- point D.C. Starter : For 2.5 kW DC motor, 8-10A.220V DC. with sophisticated cabinet. Portable type.	EL95	20 Nos.	
52	Oscilloscope Dual Trace, 30 MHZ, Band Width :- 30 MHZ, channel :-2, Time base Range :- 500Ms/s, with Probes,	EL107	20 Nos.	

	record length 2.5 K USB for storage.			
53	Function Generator: output frequency range :-1 Hz to 1 MHz, Sine, Square, Triangular wave, output amplitude : 0-20 Volt (Peak to Peak sine ,Triangle) 0- 15 V(Peak to Peak for square wave), Display :- LED, DC offset : $\pm 10\%$, 220 V, 50 Hz, Single Phase, output signal impedance -50 Hz,	EL108	20 Nos.	
54	Discrete Component Trainer : (for diode and transistor, capacitor circuit) DC Power supply :- $\pm 12\text{V}$, 250 mA, AC Power supply : 9-0-9 V /500 mA	EL109	20 Nos.	
55	Linear I.C. Trainer : DC power supply :- 0 to 5V/100mA (Two Nos.) + 12V /250mA + 5 V/250mA, 12V /250mA AC , AC power :- 220Volt, 50Hz, PIC socket 16pin and 20 pin with bread board, LCD display .	EL110	20 Nos.	
56	Digital I.C. Trainer consist of 7 segment display and bread board provided with 2 terminal strips & 4 distribution strips, regulated power supply of 5V / 1A ; 12 V / 500mA , logic input switches 12 nos. LED indicator -12 nos. clock generator of 1Hz,10Hz, & 100 Hz & 1KHz,	EL111	20 Nos.	
57	Oil Testing Kit : Voltage range :- 0 - 60 KV AC, Trip current : less than 10 mA, Control : HT ON, HT OFF, increase, decrease. Indication : Cover open, wait time, HT on, KV rise & BDV . Accuracy : $\pm 1\%$ FSD, Interlock on High voltage test chamber, zero start protect in. Accessories : Main chord, Oil test vessels with 2 Mushroom electrodes, GO No GO gauge. Input Voltage : 230 V AC ,single phase 50 Hz , 60 VA .	EL112	20 Nos.	
58	Relay:-Cut out Relays : - 5 amp, 230 v, Ac ,	EL114A	20 Nos.	
59	Relay:-Reverse current:- Normal current -1A, or 5 A from CT, Normal Voltage :- 230 Volt or 400 -415 V, Calibrated scale : 2 -20% reverse current, voltage Burden 3 VA, single Phase / 3 phase 4 wire. LED indication.	EL114B	20 Nos.	
60	Relay :- Over current :- Normal current - 5 A, Normal Voltage :- 415 Volt, 50 Hz AC, Over load : 0.3 sec, Aux. supply : 230 V/415 V +- 15%, Operating time : 2.5 sec with a 2% over current.	EL114C	20 Nos.	
61	Relay :- Under voltage:- Rated voltage 240V/ 415V AC, Rated frequency :- 50 Hz, rely setting : pickup voltage - 95% to 20% of rated voltage, Time multiplier - 0.1 to 1.6 in step of 0.1, Time/Characterises - 5.7 sec , Definite time - 1,10 sec, Accuracy +- 5%, reset voltage - 105% to 110% of set voltage.	EL114D	20 Nos.	
62	Starters for 2 to 5 H.P. A.C Motors Resistance type dry, metal enclosed 415 volt AC, 50 Hz, 3 HP, slip ring motor starter, current rating 3.8 - 6 Amps.	EL115A	20 Nos.	
63	Starters for 2 to 5 H.P. A.C Motors Direct on line Starter: 415 V, 3 phase AC, 50Hz, coil voltage -415 V, OLC relay range- 3.8 Amps to 6.2 Amps.	EL115B	20 Nos.	
64	Starters for 2 to 5 H.P. A.C Motors Star Delta Starter- manual, semi-automatic and automatic : Three phase , 16 Amps fully automatic starter, coil voltage - 380 V - 415 V	EL115C	20 Nos.	

	AC, 50 Hz, relay range - 3.8 - 6.2 Amps. Capacity - 2 - 5 HP			
65	Starters for 2 to 5 H.P. A.C Motors Auto Transformer type 415 V Ac , 50n Hz , Tapping - 50%, 60% , 70 %	EL115D	20 Nos.	
66	Lux meter : Measuring range - 0 lux - 200000 lux, accuracy - +3%, range selection - automatic measurement/ manual measurement , data hold option, lux meter LCD read out 0.05 to 7000 lumens with battery.	EL127	20 Nos.	
67	Inverter- 1 KVA with 12 V Battery Input- 12 volt DC, Output- 220 volt AC, Lead Acid Cell With Suitable Ammeter, Volt meter , selector Switch , Fuse And isolating System And indicating Lamp.	EL128	20 Nos.	
68	Electric Hot Plate 1500 watt, single phase, 230V,AC 50 Hz,	EL129A	20 Nos.	
69	Electric Kettle, 1500 watts, single phase,230V,50 Hz	EL129B	20 Nos.	
70	Electric Iron 1500 watts, Automatic - 750 W, single phase, 230 V,50Hz.	EL129C	20 Nos.	
71	Immersion Heater 1500 watt, single phase,230V, 50Hz.	EL129D	20 Nos.	
72	A.C. Fan, rating : 65 watt, 230v AC , single phase, 50 Hz , sweep -1200 mm	EL129E	20 Nos.	
73	Geyser (Storage type) 15 litre minimum storage, vertical mounted, capacity -15 litre, power rating - 2000 watt, single phase, 230 volt 50 Hz, AC,	EL129F	20 Nos.	
74	Mixture & Grinder, Rating : 500 W, single phase,230 V, Rpm 20000, insulation -class B	EL129G	20 Nos.	
75	Compound angle vice (standard sine) Width of jaw 100 mm, Opening of jaw 100 mm with 360 deg swivel, Tilt in Two way, Cast Iron or Cast Steel.	MC72	8 Nos.	
76	Micrometer outside 0-25 mm Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for consistent measurement, complete with fitted carrying case and crisp clear graduations on glare-free satin chromed sleeve and thimble	MC1	32 Nos.	
77	Micrometer outside 25-50 mm Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for consistent measurement, complete with fitted carrying case and crisp clear graduations on glare-free satin chromed sleeve and thimble	MC2	16 Nos.	
78	Micrometer outside 50-75 mm Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for consistent measurement, complete with fitted carrying case and crisp clear graduations on glare-free satin chromed sleeve and thimble	MC3	8 Nos.	
79	Micrometer depth gauge 0-200 mm Graduation : 0.01mm Micrometer head accuracy : $\pm 3 \mu\text{m}$. Rod accuracy : $\pm (2 L/75) \mu\text{m}$, L is the measuring range in	MC4	8 Nos.	

	mm. Rods with flat end Ratchet stop			
80	Digital micrometer 0-25 mm Resolution 0.001mm/0.00005" Button function: on/off, set, mm/inch, ABS/INC Without data output. SR44 or LR44 battery, automatic power off Carbide measuring faces Ratchet thimble Supplied with spherical anvil Setting standards are included(except 0-25mm/0-1")	MC5	8 Nos.	
81	Direct reading vernier caliper 0- 300 (direct reading with dial) Accuracy-0.01mm. Shockproof Dial indicator Made of stainless steel	MC6	8 Nos.	
82	Digital vernier caliper 0- 300 mm Button function: on/off, set, mm/inch, ABS/INC Without data output SR44 or LR44 battery, automatic power off .	MC7	8 Nos.	
83	Vernier height gauge 250 mm, GENERAL Accuracy : 002 inch, Base Height : 45 mm, Beam Width : 28 mm, Graduation : 001 inch, 0.02 mm, Overall length : 525 mm, Scriber Height : 32 mm . Made of Stainless steel, Carbide- tipped scriber.	MC8	8 Nos.	
84	Vernier gear tooth caliper, Range 0- 26 mm Accuracy 0.001inch/ 0.02mm.Tungesten carbide measuring surfaces, Fine adjustment on both axis. Stainless Steel	MC9	8 Nos.	
85	Combination set with 300 mm rule 90° Square Head, center Square, Protector head (1degree graduation), Scribe & level	MC10	16 Sets	
86	Vernier bevel protractor with 150 m blade, Accuracy +5/-5 min stainless steel with magnifying glass	MC11	8 Nos.	
87	Bevel gauge 200 mm	MC12	8 Nos.	
88	Telescopic gauge 13 mm to 300 mm, Spring Loaded Plunger Expands Within The Bore (Or Groove), Allowing Determination Of The Internal Diameter. With a Knurled Clamp	MC13	8 Sets	
89	Sine Bar 200 mm, Centre distance between two rollers 200mm.Suitable Size of rollers, Hardened precision ground body, IS 5259-1987	MC14	8 Sets	
90	Dial test indicator with magnetic gauge type 1 grade A with magnetic base, Plunger Type, Accuracy 0.01mm.	MC15	8 Sets	
91	Planer gauge standard size 3" Extension Nib, Length- 6-3/16" Width- 1-1/8" Height- 3-1/2" Range- 7/16"-10" Accuracy- 0.0002"	MC24	8 Nos.	
92	Micrometer Outside 0 to 25 mm Reading 0.01 mm satin chrome finished frame, tapered (on the anvil side) for hard to reach place, measuring faces made from carbide tip, spindle diameter =0.25"/6.35mm, accuracy =0.002mm	TR35	16 Sets	

	& graduation=0.01mm			
93	Micrometer Outside 25 to 50 mm Reading 0.01 mm satin chrome finished frame, tapered (on the anvil side) for hard to reach place, measuring faces made from carbide tip, spindle diameter =0.25"/6.35mm, accuracy =0.002mm & graduation=0.01mm	TR36	16 Nos.	
94	Micrometer Outside 50 to 75 mm Reading 0.01 mm satin chrome finished frame, tapered (on the anvil side) for hard to reach place, measuring faces made from carbide tip, spindle diameter =0.25"/6.35mm, accuracy =0.003mm & graduation=0.01mm	TR37	16 Sets	
95	Micrometer Inside up to 25 mm Reading 0.01 mm Features : With locking clamp. Zero point can be readjusted by twisting the micrometer head sleeve. A key wrench is supplied. Clear, crisp graduations on the satin chrome finished micrometer head. Carbide-tipped measuring faces. Specifications : Material : Stainless Steel, Color : Grey	TR38	16 Nos.	
96	Micrometer Inside up to 50 to 150 mm reading 0.01 mm Features: With locking clamp. Zero point can be readjusted by twisting the micrometer head sleeve. A key wrench is supplied. Clear, crisp graduations on the satin chrome finished micrometer head. Carbide-tipped measuring faces.. Specifications : Material : Stainless Steel Color : Grey	TR39	16 Nos.	
97	Depth Gauge Micrometer 0 to 150 mm Reading 0.01 mm FEATURES : ø4mm interchangeable rods, with lapped measuring end, provide a wide measuring range. The rod length can be adjusted in 1" or 25mm increments. With ratchet stop for constant force. With measuring rod clamp. With SPC output (Series 329). Supplied in fitted plastic case.	TR40	16 Nos.	
98	Vernier Caliper Outside, Inside and Depth 200 mm /8 inches with metric & inch scale Caliper has a measuring range of 0 to 200mm with 0.02mm graduation and an accuracy of +/- 0.03mm. This is a High Accuracy model. Features a small face angle of 14 degrees which provides easy reading. Measures Outside Diameter, Inside Diameter, depth and steps. Furnished in Satin Stainless Steel with easy reading graduations. Equipped with a lock screw for holding the sliding jaw position allowing the user to get easy measurements.	TR41	48 Nos.	
99	Dial Vernier Caliper with metric 200 mm reading 0.05 mm <ul style="list-style-type: none"> • Dial for measuring vernier scale, for ease of reading • Hardened stainless steel construction, for protection of caliper components • Four-way measurement capability, for outside (OD), inside (ID), depth, and step measurements • Titanium nitride (TiN) coating on beam surfaces, for resistance to wear • Metric system of measurement, for high-precision 	TR42	48 Nos.	

	readings			
100	Vernier Bevel Protractor 300 mm blade Hardened stainless steel construction	TR43	48 Nos.	
101	Vernier Micrometer 0 - 25 mm o/s LC 0.001mm <ul style="list-style-type: none"> • Range = 0-25mm • Accuracy = +/- 2µm • Graduation = 0.01mm • Data Output = No • Flatness = 0.6µm • Measuring Faces = Carbide tipped • Measuring Force = 5-10N • Parallelism = 2µm 	TR44	16 Nos.	
102	Vernier Micrometer 25 - 50 mm outside reading 0.001mm• Range = 0-25mm• Accuracy = +/- 2µm• Graduation = 0.01mm• Data Output = No• Flatness = 0.6µm• Measuring Faces = Carbide tipped• Measuring Force = 5-10N• Parallelism = 2µm	TR45	16 Sets	
103	Vernier Micrometer 0 inch to 1 inch. Outside Reading 0.0001 inch <ul style="list-style-type: none"> • Range = 0-25mm • Accuracy = +/- 2µm • Graduation = 0.01mm • Data Output = No • Flatness = 0.6µm • Measuring Faces = Carbide tipped • Measuring Force = 5-10N • Parallelism = 2µm 	TR46	16 Nos.	
104	Dial Test Indicator 0.01 mm with magnetic base Universal Dial Test indicator- plunger type Range 0 – 10 mm, Graduation 0.01mm complete with clamping devices & magnetic stand Product features <ul style="list-style-type: none"> • 196 series dial indicator measures 0 to 0.2" with 0.001" graduations for precise measurement of rise or drop in work piece • 0 to 100 counter with one revolution equivalent to 0.1" • Plunger-type dial back with three contact point sizes, 1/2", 5/16", and 1/8" diameter • White-face dial with scratch-resistant crystal face for ease of reading • 1/4" diameter stainless-steel shank for mounting 	TR52	16 Sets	
105	Vernier Height Gauge with dial 300 mm L.C. 0.01 mm <ul style="list-style-type: none"> • Zero reference point can be adjusted. • Stain chrome finished scales for glare-free reading. • Extra-large base for rigidity. • Optional magnifier for easier reading • Carbide-tipped scribe is provided 	TR53	8 Sets	
106	Plain Gauge 12 to 50 mm by 1mm Material- Chrome plated steel	TR56	8 Sets	
107	Ring Gauge 12 to 50 mm by 1mm Material- Chrome plated steel	TR56A	8 Sets	

108	Plug Gauge 12 to 50 mm by 1mm Material- Chrome plated steel	TR56B	8 Sets	
109	Screw Thread micrometer interchangeable <ul style="list-style-type: none"> • For use with V-anvil and conical spindle inserts for measuring pitch diameter of screw threads (sold separately) • Vernier scale in metric units for taking precise outside diameter (OD) measurements • Ratchet-stop mechanism helps provide uniform pressure for precise, repeatable measurement • Satin chrome finish on thimble and sleeve helps resist rust and reduce glare • Hammertone, baked enamel finish for protection and durability of frame 	TR59	8 Nos.	
110	Morse Taper Plug & Ring Gauge Nos. 0 to 7 MT Gauges made from a hardened gauge steel	TR 60	8 Sets	
111	Slip Gauge metric set (87 pieces in a Box)with workshop grade <ul style="list-style-type: none"> • Highly accurate, very low deviation from flatness, surface finish & nominal length • High resistance to wear & dimensionally stable • Superior wringing quality • Each gauge block is marked for size & serial number Material- Ceramic/carbide/steel	TR 62	16 Nos.	
112	Morse Taper Sleeves Nos. 0-1, 1-2, 2-3, 3-4, 4-5 (Complete one set) Material- Case hardened Hi Tensile steel (20 MnCr5/SAE8620), these are fully hardened and are ground on the inside and outside	TR 63	8 Sets	
113	Thread Plug Gauge M-20 & M-21 Material-Chrome plated steel	TR 101	8 Sets	
114	Thread Ring Gauge M-20 & M-21 Material- Chrome plated Steel	TR 102	8 Nos.	
115	Digimatic Electronic Vernier Caliper inch and mm 8"/200 mm. LCM 0.005"/0.001 mm Inch and mm, 8"/ 200mm,with least count 0.005"/0.001mm Large & clear LCD, Smooth slider movement for comfortable operation, allows steps measurements, carbide tipped jaws for rough finished part, for casting etc.	TR 5	8 Nos.	
116	Digimatic electronic outside Micrometer (0 to 25 mm) LC 0.001 mm.	TR 6A	8 Nos.	
117	Digimatic electronic outside Micrometer (25 to 50 mm) LC 0.001 mm.	TR 6B	8 Nos.	
118	LCD projector - Minimum 2700 Ancilumens with XGA resolution and large type standard quality screen	TRD4	8 Nos.	
119	Universal Weld measuring gauge Made:- S.S. Model- fillet measuring gauge 0-50mm and degree upto 90 degree. Fillet and butt both digital based (high Accuracy for inspections).	WL 21	32 Nos.	
120	Electrode holder 600 amps Jaws fully insulated with HOFR compound cover. 600Amps.	WL27	96 Nos.	

121	Auto Darkening Welding Helmet UV/IR protection : Up to Shade DIN 16 at all times, Light state: Shade DIN 4, Variable shade : From DIN 9 to DIN 13, Power supply : Solar cell & lithium batteries(2pcs CR2032), Power on/off : Fully automatic, Sensitivity : Adjustable, Grinding/Welding : Support, Switching time : 1/25000s, Delay time : 0.2-0.8s adjustable, Operating temperature : -5 to 55 degree Celsius (23 to 131 degree Fahrenheit), Storage temperature : -20 to 70 degree Celsius (-4 to 158 degree Fahrenheit) Helmet material : PP	WL47	32 Nos.	
122	Die penetrate testing kit Size of testing table 1000mm L x 900mm H X 750mm W, Table top fabricated by Stainless Steel Sheet of 2.5mm.UV lamp Testing Booth Size-1200mm L x 1500mm H x 900mm W, Booth Should be 3 sided Full ACP Wall Covered, Equipment must have-LED Spot Light arrangement, Solution Dryer and UV Lamp and use friendly control panel. Accessories : DP Testing Solution-02 sets.	WL67	16 Sets	
123	Magnetic particle testing Kit, Power source in put – 440 V. 3 ph. 50Hz, input load – 15 Amps. , output type A/C & HWDC, type of control – thyristorised, output 750 amps. Out put Volt.-3 to 15 V. prod cable – 3mtr. Length., locate defects in any direction using prods, central conductor, coil(wrap part with 3-5 turns of cable).Magnetic yoke type Accessories :-Testing table:- 600X600X900mm with rack system 01 Nos. dry visible powder-02 Kg. dryer – 01 Nos. puffer bulb- 01 Nos.	WL68	16 Sets	
124	LCD projector - Minimum 2700 Ansilumens with XGA resolution and large type standard quality screen	WL5	8 Nos.	
125	Dual DC regulated power supply 30-0-30 V. 2 Amps. DC voltage : 0 to+ 30V, 0 to-30 V,2A with Digital display for voltage & current Best quality with manual	EM C26	48 Nos.	
126	DC regulated variable power supply 0-24 V. 1 Amp With Digital display for voltage & current, Best quality with manual	EM C27	24 Nos.	
127	LCR meter (Digital) Bench top Type Measurement Modes : Auto/ Manual L, C, R, Z, Q, D Measurement Ranges : Auto or Manual L : 0.1 microH to 9999 H, Resolution 0.1 microH C : 0.1 pF to 9999 microF, Resolution 0.1 pF R : 0.001 ohm to 100 Mohm, Resolution 0.001 ohm Z : 0.001 ohm to 100 Mohm, Resolution 0.001 ohm Q : 0 to 99 D : 0 to 10 theta : -180 to +180 digital Display, Measuring parameter L,C,R,D,Q. Reputed company with manual	EM C28	12 Nos.	
128	CRO Dual Trace 20 MHz (component testing facilities) DC to 20MHz Bandwidth, Operating Mode Channel 1, Channel 2, Channel 1 & Channel 2 alternate or chopped, XY	EM C29	24 Nos.	

	Operation, Add / Sub, with Component tester, 1 : 10 probe, manual.			
129	Signal generator, 0-100 KHz. Sine, Square, Triangular wave with Digital display, Best quality	EM C30	24 Nos.	
130	Battery Charger 6V, 12V, 7.5A lead acid battery Charger	EM C31	12 Nos.	
131	Analog multi meter DCV-0.1v/0.5v/2.5v/10v/50v/250v/1000v ACV-10v/50v/250v/1000v DCA-50uA/2.5mA/25mA/0.5A Resistance-2k Ω /20K Ω /2M Ω /20M Ω from any reputed company	EM C32	48 Nos.	
132	Function generator (triangular, square & sine wave) Frequency Range 0.3Hz to 10MHz Digital Frequency LCD Readout for frequency & mode Waveforms: Sine, Square, Triangle, DC DC-Offset Adjustment Trigger Output Internal Sweep & External FM-Modulation Square Wave Risettime Typ. 40ns Distortion Factor < 0.5% (upto 100kHz) with Manual	EM C33	24 Nos.	
133	Analog component trainer, Onboard Bread Board for circuit design, on board dc power supply, +12Volt 1 Amp, +5 Volt 1 Amp, \pm 12 Volt 1 Amp (Variable), On Board AC Power Supply 15Volt-0-15Volt, On Board function generator, Sine, Square, Triangle (1Hz-20KHz), Continuity Tester with beeper.	EM C35	48 Nos.	
134	OP Amp trainer, DC Power Supply Fixed : \pm 5 Volts @ 1 Amp. , \pm 12 Volts @ 1 Amp 1.2v to \pm 15v @ 1 Amp Variable DC, Function generator, Sine Wave, Square Wave, Triangular Wave (100Hz to 100 KHz, 0-6 Vpp), Variable Resistance 1K Ω , 10K Ω , 100K Ω , 1M Ω .	EM C36	36 Nos.	
135	Digital IC trainer Regular size of bread board-02 Nos. Bounce less pulser 1Hz to 100KHz TTL Clocks, Logic input switches-10 Nos. Logic Status LED Indicator-10 Nos. 7 Segment Display-02 Nos. on board regulated DC power supply +5V/1A & +12V/1AAC input 230 Volt 50Hz Mounted in Cabinet. With patch Cord and manual.	EM C37	48 Nos.	
136	Digital IC tester Tests most of the 6 to 40 pin ICs in DIP package. The list includes 74/54, 40/45, 93/96 series ICs, EPROMs, RAMs, peripheral ICs, microprocessor (8088/8085/Z80/6502), operational amplifiers, voltage comparators, transistor arrays, opt couplers, analog switches, voltage followers, timers, A to D converters, D to A converters and miscellaneous analog ICs. • Automatic testing of variety of ICs. 40 pin universal ZIF socket	EM C38	12 Nos.	
137	Digital and Analog bread board trainer	EM C39	72 Nos.	

	<ul style="list-style-type: none"> • On platform bread board to circuit design • On board DC power supply: +5V/1A(fixed), ±15V/1A(fixed), ±15V/200mA(variable) • On board AC supply : 5v-0-5v;10v-0-10v(provision for 5v,10v,15v,20vAC & also centre tap) • Sine/square/TTL generator 10 Hz to 1 MHz in 4 steps(variable in between the steps) • Amplitude: sine(0-15v PP),square wave (0-10v pp), TTL - 5v (fixed) • Data switch 08 nos. • LED display 08 nos. • 7 segment display • Power supply 220v/50 Hz • Manual • Patch cords 			
138	Rheostats various values and ratings Hand sliding arm type, Value -50Ω,1.5A	EM C40A	24 Nos.	
139	Rheostats various values and ratings Hand sliding arm type, Value - 300Ω,1A	EM C40B	24 Nos.	
140	<p>POWER ELECTRONICS trainer with at least 6 no's of onboard applications</p> <ul style="list-style-type: none"> • On platform bread board to circuit design • On board DC power supply : ±5V/500mA, ±12V/500mA, +15V/250mA • On board AC supply : 0-15v;18v-0-18v • On board firing circuit • Amplitude : 12v • SCR assembly 4 SCRs 400v/2A • Power devices : IGBT,MOSFET,UJT,DIAC,TRIAC,PUT-2N6027 • AC power supply 220v/50 Hz • ON board application : i) characteristics of the following: UJT,SCR,MOSFET,TRIAC,DIAC,IGBT,PUT • Manual • patch cords 	EM C41	48 Nos.	
141	<p>Electronic circuit simulation software with 6 user licenses</p> <ul style="list-style-type: none"> • Analog, digital, RF, Vhdl, Symbolic & mixed mode Circuit analysis, design, convert into PCB layout. • Real time measurements, lab view interface upload to FPGAs live presentation, multimedia parts, advanced diagrams virtuals instruments • Integrated PCB layout design with 3d view • Test & debug microprocessor & microcontroller applications • Circuit simulation & PCB design • Function to plot the frequency response, Phasor diagram etc. • Virtual measurement: <ul style="list-style-type: none"> o Digital multimeter o DSO o Digital signal generator 	EM C46	12 Nos.	

	<ul style="list-style-type: none"> o Logic analyser o Real time storage oscilloscope o Plug in EXPERIMENTER MODULES Multilayer PCB layouts of circuit *PCB design facility *manual			
142	DSO (colour) 70MHz BW , 2 Channel, 7" TFT Color Display or LCD (Color), USB Communication Port with probe, manual.	EM E1	12 Nos.	
143	Soldering & De soldering Station, Temperature controlled 60 W, Pointed bit soldering Iron , 70W Desoldering with hot air blower	EM E2	12 Nos.	
144	SMD Soldering & De soldering Station with necessary accessories Temperature controlled 60 W, Pointed bit soldering Iron , 70W Desoldering with hot air blower, Stand, Water sponge,	EM E3	24 Nos.	
145	DOL starter	EM E4	12 Nos.	
146	Electrical trainer fitted with resources (DOL starter, contactors, relays, MCB, motor suitable for electrical control circuit exercises) <ul style="list-style-type: none"> • Provided with DOL Starter single phase, 3 phase. • Inbuilt relay & contactor, MCB • Provided digital tachometer • Main supply three phase 415volt,50Hz • Main supply single phase 230volt,50Hz • Three phase induction motor squirrel cage,1HP,415v. • Digital meter- watt meter, voltmeter, ammeter • Manual • Provided with digital tachometer • Single phase ac motor,1/4 hp • L.T control switch • Over load Relay 	EM E6	24 Nos.	
147	Frequency modulator and Demodulator trainer kit • On board audio oscillator, 3 types of FM modulator• 5 different types of demodulator amplitude limiter & filter,• Test points for signal flow & analysis• Modulating signal range : 300Hz to 3.4kHz• FM Modulator Type : Reactance Modulator, Varactor Modulator, VCO Based Modulator• FM Demodulator Type : Detuned Resonant Detector, Quadrature Detector, Foster seeley Detector, Ratio Detector, PLL Detector• manual	EM E7	24 Nos.	
148	PAM, PPM, PWM trainer kit <ul style="list-style-type: none"> • PAM-PPM-PWM Modulation & Demodulation techniques, using Natural & Flat-top sampling • On board filter and AC amplifier • On board sampling 8kHz , 16kHz • Pulse frequency 32kHz, 64kHz • Voice communication using dynamic micro phone and speaker • Selectable four different pulse frequencies on board • Multiple test points 	EM E8	24 Nos.	

	<ul style="list-style-type: none"> • manual 			
149	<p>Microcontroller kits (8051) along with programming software (Assembly level programming)</p> <ul style="list-style-type: none"> • 8051 clock frequency 11.0592 MHz • Assembler PC based & assembly level language based software • Programmer (USB connectivity & RS 232C with pc) <p>programming language : assembly level language</p> <ul style="list-style-type: none"> • Trainer kit • User can write assembly language program in pc & also can enter opcode through trainer • Compatible with different interface • DC power supply as needed • Manual 	EM E10	48 Nos.	
150	<p>Application kits for microcontrollers 6 different applications</p> <ul style="list-style-type: none"> • DC, Stepper motor interface • LCD interface • Event Counter interface • ADC & DAC interface • CC & CA seven segment display interface • Traffic light controller interface • manual 	EM E11	12 Sets	
151	<p>Sensor trainer kit (containing various sensor like Thermocouple, RTD, thermocouple, load cell, strain gauge, LVDT, smoke sensor, speed sensor)</p> <ul style="list-style-type: none"> • In built with the following sensors • TEMPERATURE SENSORS : Using RTDs, Thermistors, pt 100, Thermocouples • SPEED MEASUREMENT SENSORS: • proximity & Optical Sensor • LOAD MEASUREMENT SENSOR: Using load cell • STRAIN MEASUREMENT SENSOR: Using strain gauge • DISTANCE/DISPLACEMENT MEASUREMENT SENSOR: Using LVDT Sensor • SMOKE SENSOR, CAPACITIVE SENSOR ETC. • On board simulation • Graphical touch LCD with inbuilt processor for viewing the output waveforms • Inbuilt DAQ • On board Graph capture & store • Square wave generator: up to 40 KHZ • F/V converter : 1KHZ-1V,10KHZ-10V • V/F converter: 1V-1KHZ,10V-10KHZ • manual 	EM E12	24 Nos.	
152	<p>Fiber optic communication trainer</p> <p>Transmitter : 02 NOS, Fiber optic LED having 660nm & 950 nm wavelength</p> <p>Receiver : Two Nos., Fiber optic photo detector</p> <p>FM,PWM ,PPM Modulation Driver : Analog & Digital Mode</p> <p>AC amplifier, PLL Detector , Filter, on board Function Generator sine wave(amplitude adjustable),square wave</p>	EM F1	24 Nos.	

	(TTL), Analog Bandwidth 350 kHz, Digital BW ,Fiber optic voice link(in built) using microphone & speaker, RS232C PC to PC serial linkmanual			
153	Seven segment DPM, 3½ digit seven segment display, Maximum input : 199.9mv DC, Accuracy : ±0.5% of full scale, Extention of range : upto 500v DCwith Manual	EM F2	72 Nos.	
154	LCD based DPM, 3½ digit LCD display, Maximum input :199.9mv DC, Accuracy : ±0.5% of full scale, Extension of range : upto 500v DCwith Manual	EM F3	72 Nos.	
155	UPS trainer Input : 190v to 260v , 50 Hz Output : 230v Rechargeable Battery as suitable <ul style="list-style-type: none"> • PWM switching technology • Various test points provided so that user can easily measure the voltages of different sections • To identify different faults & to study the systematic procedure of trouble shooting in UPS circuit • Study the UPS in load condition • Study the transformer section of UPS • Manual 	EM F5	12 Nos.	
156	UPS 3 KVA with backup time minimum 30 minutes Including Battery, Best quality with Manual	EM F6	12 Nos.	
157	Smart phones of different make(LG / SAMSUNG / NOKIA OR EQUIVALENT) (android) <ul style="list-style-type: none"> • 13MP primary camera with auto mode, beauty face, continuous shot, interval shot, panorama mode and 5MP front facing camera with palm gesture selfie and 120 degree selfie mode • 13.86 centimeters (5.5-inch) TFT capacitive touch screen with 720 x 1280 pixels HD display • Andorid v6.0 Marshmallow operating system with 1.2GHz Qualcomm Snapdragon quad core processor, 2GB RAM, 16GB internal memory expandable up to 128GB and dual SIM (micro+micro) dual-standby (4G+4G) • Removable Li-Ion 3000 mAh battery. • 1 year manufacturer warranty for device and 6 months manufacturer warranty for in-box accessories including batteries from the date of purchase 	EM F7A	8 Nos.	

158	<p>Smart phones of different make (LG / SAMSUNG / NOKIA OR EQUIVALENT) (windows)</p> <ul style="list-style-type: none"> • 5MP primary camera with auto focus, LED flash and 5MP front facing camera • 5-inch (12.7 centimetres) qHD IPS LCD multi-touch capacitive touch screen with 960 x 540 pixels resolution, 220 ppi pixel density and 16M color support • Windows Phone v8.1 operating system with 1.2GHz Snapdragon 200 quad core processor, 1GB RAM, 8GB internal memory expandable up to 128GB and dual micro SIM (GSM+GSM) • 1905mAH lithium-ion battery providing talk-time of 11 hours on 2G, 13 hours on 3G networks and standby time of 168 hours • 1 year manufacturer warranty for device and 6 months manufacturer warranty for in-box accessories including batteries from the date of purchase 	EM F7B	8 Nos.	
159	Cell phone power source with charger chords for different cell phones ,Power source with Multiple Cell phone Charger chords 6 in 1 like micro usb, mini usb etc of Best quality	EM F11	12 Nos.	
160	<p>LCD TV (Trainer kit)</p> <p>Display : LCD, HD ,(Color)</p> <p>Screen Size : 21"(53cm)</p> <p>Video interface: video input/VGA input</p> <p>Audio interface : RCA L & R</p> <p>Connectivity : USB,HDMI,VGA In, VGA Audio in, RF In, AV In, AV out, composite, component</p> <p>Mains Supply : 230v AC, 50 Hz</p> <p>Receiving system PAL</p> <p>Switched Faults & Test Points Provisions,</p> <p>Application : colour TV/PC Monitor connectivity</p> <p>Remote controlled</p> <p>Manual</p>	EM F12	12 Nos.	
161	LCD TV (21") : TV with LCD display, 21",HD / Full HD, HDMI,USB,VGA, Composite component	EM F13	24 Nos.	
162	<p>LED TV (Trainer kit)Display : LED, full HD/HD ,(Color)Screen Size :20"(50cm) Video interface : video input/VGA inputAudio interface : RCA L & RConnectivity : USB,HDMI,VGA In, VGA Audio in, RF In, AV In, AV out, composite, componentMains Supply : 230v AC, 50 Hz</p> <p>Receiving system PALSwitched Faults & Test Points, Provisions, Application : colour TV/PC Monitor connectivity Remote controlled manual</p>	EM F14	12 Nos.	
163	LED TV (21") : TV with LED display, 21", Full HD, HDMI,USB,VGA, Composite component	EM F15	24 Nos.	
164	Home theatre system 5.1 channel, Dolby digital, 1000W, HDMI, USB, Optical audio, Analog audio & Composite video, ARC.	EM F16	12 Nos.	

165	Solar power inverter 500 VA Solar Panel 250 Wp – 2nos, Battery 100Ah -02 nos, Charge controller-1no, Control panel with inverter 500va.	EM F17	12 Nos.	
166	LED lighting system Controller For LED Lights with 12 Volt Rectifier , 100W, LED Stack & protection circuit.	EM F18	24 sets	
167	Automotive exhaust 5 gas analyzer(petrol & Diesel) or Diesel Smoke Meter : Operating voltage : 230 V/ 12V DC, Measuring automobile emission gas like CO,CO2, HC, O2 and NOS.	MDC3	12 Nos.	
168	Multi Scan Tool with oscilloscope	MDC16	12 Sets	
169	CYLINDER BORE GAUGE, CAPACITY 20 to 160 mm Capacity 20-160 mm with carbide Tips and Anvils.	MD 28	48 Nos.	
170	Depth Micrometer 0-25 mm • Ratchet Stop for consistent and repetitive measurements. • $\varnothing 4\text{mm}$ (.157" DIAMETER.) measuring face. • Satin-chrome finished throughout. • With spindle locking clamp. • Crisp clear graduations on the thimble.	MD 31	48 Nos.	
171	Fuel feed pump for Diesel Fitted with Six Cylinder (Approx 6000CC) Diesel Engine. Plunger type.	MD 52	12 Nos.	
172	Fuel Injection Pump (Diesel) In-line Fitted with Six Cylinder (Approx 6000CC) Diesel Engine with mechanical governor.	MD 53	12 Nos.	
173	Fuel Injection Pump VE pump/ Distributor fuel rotary pump(DPC) pump/ along with special tools and accessories Fitted with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, VE pump / Distributor fuel rotary pump (DPC) pumps /Pressure Time (PT) pump along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.	MD 55	12 Nos.	
174	Outside Micrometer 0-25 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 88	48 Nos.	
175	Outside Micrometer 25-50 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 89	48 Nos.	
176	Outside Micrometer 50-75 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 90	12 Nos.	
177	Outside Micrometer 75-100 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MD 91	12 Nos.	

178	Torque Wrenches 5-35 Nm, Material: Chromium vanadium Steel.	MD 147A	12 Nos.	
179	Torque Wrenches 12-68 Nm Material: Chromium vanadium Steel.	MD 147B	12 Nos.	
180	Torque Wrenches 50-225 Nm Material: Chromium vanadium Steel.	MD 147C	12 Nos.	
181	Binocular Magnification 12X maximum, Zoom-7X-12X, Apperture-30mm opening, Field of view-1000 yards, Laser Prism & Suitable focus	SR 5	64 Nos.	
182	Dumpy level fitted Erected Image system Blue coated high range lenses. Acrometic Eyepiece in Fibre ABS plastic Deluxe Box in powder coated aluminium tripod stand in cover.	SR17	96 Nos.	
183	Auto level Image erect, Magnification-32X, Multiplication Constant-100, Additive Constant-0, Sensitivity of bubble-10'/2mm	SR18	80 Nos.	
184	Levelling staff - telescopic type Made of aluminium, 4 meter in 3 sections, graduated & marking in both sides with carrying case, standard type used in survey field.	SR30	160 Nos.	
185	Planimeter (digital), Planimeter addition measurement in three units (in sq. ft. sq. cm., ---)(digital) Roller type with computing function , LCD display, 8 digits, 10 symbols, maximum value – 10 m ² , accuracy, +2% with AC adapter & carrying case.	SR38	32 Nos.	
186	Telescopic alidade, Internal focusing 151 mm completes with trough compass, plumbing fork, plum bob, standard type used in survey field.	SR41	80 Nos.	
187	Theodolite transit, Telescope Model-20, Image erect magnification 25X, Vernier reading 20 Sec. , Circle diameter- Hz 113mm, V 100mm.	SR57	80 Nos.	
188	Digital Theodolite, latest model With all accessories (Features:-Based on laser technology. Two large LCD panel with easy to read .Automatically compensates tilt in two direction and compensates vertical angles. High integrated electronic board and IC elements)	SR58	32 Nos.	
189	Total station, Instrument for Total Station with latest model, with all accessories (Graphic LCD display on both side. Multy function key board on both side. Able to interchange data between GPS and total station without any data conversion. Minimum 8 hours rechargeable li-lion battery. Pols and Prism 2 nos. each.	SR62	32 Nos.	
190	Hand GPS latest version capable of showing 1. Instant longitude and latitude 2. Built in Barometric Altimeter and Electronic Compass 3. Battery operated; two AA size battery with 18 hours life typical 4. Colour Display, 256 colour TFT: 2.2x1.6 inch (min) 5. Receiver sensitivity: High	SR63	32 Nos.	

	6. Accept Micro SD card (1GB min.) 7. More than 100 plus user datum 8. USB cable and Software for USB and Serial interface, Computer cable (User Manual and other accessories) 9. Carrying case 10. Water proof casing (IPx7)			
191	Electrical drill portable drill with chuck and key Specifications : capacity 6.4mm, drill chuck ,type- keyed chuck, Motor capacity 1/4 HP	RACA-35	40 Nos.	
192	Tong tester (clamp on multi meter) Specifications 0-10-30 amps 0-500 v, AC current accuracy +/- 2%,AC/DC voltage accuracy +/-1.5%,Resistance accuracy +/- 1%, power (KW/HP) +/- 2%	RACA 43	40 Nos.	
193	Voltmeter, AC/DC portable precision grade Digital Panel board type Specifications 0 to 500 volt, Measurement range from 50Hz to 60HZ, Accuracy rate of +/- 0.05Hz	RACA 44	40 Nos.	
194	Ammeter, AC/DC portable precision grade Digital Panel board type Specifications : 0 to 30 amp, supply 230 Volt, 50HZ AC	RACA 45	40 Nos.	
195	Megger, Specifications : 1000v, insulation resistance range 100 G Ω	RACA 46	40 Nos.	
196	Multi meter digital type Specifications : measurement type -AC , DC, AC/DC, AC current range 10A,DC current range 10A, D voltage range 1000V, AC voltage range 1000v, Capacitance range 50mf,Temperature range -200°C to 1372°C	RACA 48	40 Nos.	
197	K.W. meter , Specifications: 0 -1 K.W, Single phase, 220 V.	RACA 52	32 Nos.	
198	Fire extinguisher : Specifications : ABC dry powder type2 kg capacity	RACA-53	8 Nos.	
199	Service Oscillator, Specifications : 1Hz to 110MHZ with standard accessories	RACA-58	8 Nos.	
200	C.R.O Single beam, Specifications : 5 MHZ with standard accessories	RACA-59	16 Nos.	
201	C.R.O Dual trace/ Double beam, Specifications : 60 MHZ with standard accessories	RACA-60	16 Nos.	
202	A.F.O Oscillators, Specifications : 20 Hz to 20KHZ band with standard accessories	RACA-61	16 Nos.	
203	Pressure gauge Digital type Specifications : Diameter 63mm with recalibration set	RACA 79	40 Sets	
204	Compound gauge, Digital type Specifications : Diameter 63mm, with recalibration set screw, scale vacuum 76mm. Pressure 15 Kg/sq.cm	RACA 80	40 Sets	
205	Service man thermometer in metal case Specifications : - 30 C to +30 C	RACA 81	40 Sets	
206	Vernier calliper, Specifications : Length 300 mm Accuracy 0.001inch/ 0.02mm.Tungesten carbide measuring surfaces, Fine adjustment . Stainless Steel.	RACA 100	16 Nos.	

207	Micrometer outside measurement, Specifications : Range 0-25 mm. Enamelled frame of nodular cast iron, tapered on the anvil side for hard to reach places, micro-lapped carbide measuring faces, positive locking clamp and ratchet stop for	RACA 101	16 Nos.	
208	Multi meter analogue type, Specifications : 0 to 1000 M Ω , 2.5 to 500V	RACA 104	40 Nos.	
209	Tachometer digital, multi range, Specifications: 0 r pm to 3000 rpm. Portable small size in leather case	RACA 105	40 Nos.	
210	Micron vacuum gauge, Specifications: Capable of reading up to 20 microns of Hg.	RACA 106	40 Nos.	
211	Sensor thermometer (digital)	RACA 107	40 Nos.	
212	Dial thermometer remote control, armoured capillary dial Specifications : 75mm - 50C to +50 C	RACA 111	24 Nos.	
213	Anemometer Digital type, 0- 44.8 m/S, resolution 0.1m/s, accuracy +/- 3%	RACA 112	8 Nos.	
214	Digital thermometer [Treated as consumable] Specifications: Graduated disc analogy type, remote control armoured capillary dial 75 mm, -50 to 150degree C	RACA 115	8 Nos.	
215	Temperature & Humidity recorder Specifications : Capacity to record 24 hrs record	RACA 116	8 Nos.	
216	Digital weighing machine, Specifications : 100 kg capacity	RACA-118	8 Nos.	
217	Star delta starter, Specifications: 2 H.P., 3 phase, 415 V, 50Hz, 3.5Amp.	RACB-4	8 Nos.	
218	Auto Transformer starter, Specifications : 3 H.P., CRC/FRP/ Galvanised sheet with powder coated metal box housing, MCB facility, Digital Voltmeter, Digital Ammeter, Over load protection, power & control wiring by copper wire.	RACB-5	8 Nos.	
219	D.O.L Starter, Specifications : 2 H.P. Sheet steel enclosure type with MF, MK, MU & MB. Motor rating, 415 V, 50Hz, 3 Phase.	RACB-6	8 Nos.	
220	Portable air - LPC brazing kit, Specifications : 2 kg. LPG cylinder, torches, houses,	RACB-7	8 Nos.	
221	Refrigerator : Specifications: 165L carrying with HFC-134a	RACB-9A	16 Nos.	
222	Refrigerator : Specifications: 165L carrying with HC	RACB-9B	16 Nos.	
223	Frost free refrigerator : Specifications: 200L carrying with HC blend	RACB-10	16 Nos.	
224	Three/four door refrigerator : Specifications : 300L carrying with HC R-600a	RACB-11	16 Nos.	
225	Evacuating and refrigerant charging station, consist of a) Rotary two stage vacuum pump and motor (with gas ballast and anti such back) b) manifold with gauges and valves and capable of pulling vacuum up to 50 microns of Hg and with provision of connecting to a microns level vacuum gauge	RACB-14A	8 Nos.	

226	Evacuating and refrigerant charging station, consist of b) Graduated charging cylinder with provision for temperature correction and all necessary isolating valves II) Evacuating and charging station as above but fitted with weighing scale Specifications : (CAP. 2 kg. In lieu of (b) above and with accuracy of +/-1 g for charging hydrocarbons)	RACB-14B	8 Nos.	
227	Dry N2 in cylinder, Specifications : 2 stage regulator or commercial N 2 in cylinder with drier unit and 2 stage regular 7meter cube	RACB 18	8 Nos.	
228	Window A.C : Specifications : 1 Ton with R-22 or HFC Blend reciprocating compressor	RACB-19	16 Nos.	
229	Split A.C : Specifications : 1.5 Ton with R134a or R-22 reciprocating compressor	RACB-20	16 Nos.	
230	Duct able split A.C 1.5 ton : Specifications: 1.5 Ton with R134a or R-22 reciprocating compressor	RACB-21	8 Nos.	
231	Cassette Air conditioner : Specifications: 4500 kcal/hr	RACB-23	8 Nos.	
232	De scaling pump set : Specifications: Stainless steel impeller and housing complete with motor 1/2 hp and accessories	RACB-24	8 Nos.	
233	Fan coil unit : Specifications : Water valves (2 & 3 way)	RACB-25	8 Nos.	
234	Shell and tube, DX chillers (small), Specifications: 5 Ton with Cu tubing only	RACB-26	8 Nos.	
235	Shell and tube type condenser, Specifications : 5 Ton	RACB-28	8 Nos..	
236	Bottle cooler visible, Specifications : 200 L carrying with HFC-134a& reciprocating compressor	RACB-31	8 Nos.	
237	Deep freezer, Specifications : 200 L carrying with HFC-134a& reciprocating compressor	RACB-32	8 Nos.	
238	Water cooler storage type, Specifications : 200 L carrying with HFC-134a& reciprocating compressor	RACB-33	8 Nos.	
239	Ice candy plant Specifications : 2 ton with capacity to make 32 ice candy at a time with Forma tray, stainless steel tank on trolley	RACB-34	8 Nos.	
240	Air-conditioning, direct and indirect system. Specifications: Complete with all controls including humidity control capacity 15000Kcal/hr (5 ton)	RACB-35	8 Nos.	
241	Package A/C, Specifications : 5 ton capacity, Air cooled type with open type compressor reciprocating type	RACB-36	8 Nos.	
242	Car A.C components(full kit) a) Wobble plate compressor with mounting brackets. b) Serpentine Evaporator c) Parallel Flow Condenser d) Hoses, tubes, Receiver, Ex. valve. e) Electrical components & wiring Harness Specifications: a) Wobble plate compressor with mounting brackets. b) Serpentine Evaporator c) Parallel Flow Condenser d) Hoses, tubes, Receiver, Ex. valve. e) Electrical components & wiring Harness	RACB-37	8 Sets	
243	CAR AC tutorial model	RACB-38	8 Sets	
244	Auto Electrical test bench, Model : Table Top fitted with digital Ammeter/Voltmeter, Power requirement :	MMV14	8 Nos.	

	220Volt,15 Amps, Motor capacity: 2 HP induction motor protect with circuit breaker			
245	Battery charger : 6- 24 Vols,10 Amps, single phase, with connects cables, clips, voltage & current indicator.	MMV15	16 Nos.	
246	Demonstration board of 2W Ignition system, Ignition Coil	MMV 46	8 Nos.	
247	Demonstration board of Electronic Ignition System, Ignition Coil	MMV 47	8 Nos.	
248	Demonstration Board of MPFI system	MMV 48	8 Nos.	
249	Depth Micrometer 0-25 mm • Ratchet Stop for consistent and repetitive measurements. • $\phi 4\text{mm}$ (.157" DIAMETER.) measuring face. • Satin-chrome finished throughout. • With spindle locking clamp. • Crisp clear graduations on the thimble.	MMV 49	32 Nos.	
250	Dial gauge type 1 Gr. A (complete with clamping devices clamping devices Least Count- 0.01mm	MMV 50	32 Nos.	
251	Outside Micrometer 0-25 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation Accuracy of $\pm 2\mu\text{m}$.	MMV 117	32 Nos.	
252	Outside Micrometer 25-50 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation Accuracy of $\pm 2\mu\text{m}$.	MMV 118	32 Nos.	
253	Outside Micrometer 50-75 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation Accuracy of $\pm 2\mu\text{m}$.	MMV 119	32 Nos.	
254	Outside Micrometer 75-100 mm Baked enamel finished frame, Carbide measuring faces, Equipped with ratchet stop for constant measuring force, 0.01mm of graduation, Accuracy of $\pm 2\mu\text{m}$.	MMV 120	32 Nos.	
255	Starter motor axial type	MMV160A	8 Nos.	
256	Starter motor pre-engagement type	MMV160B	8 Nos.	
257	Starter motor co-axial type	MMV160C	8 Nos.	
258	Air conditioning service Unit Car : Operating voltage : 230VAC $\pm 10\%$, Frequency : 50/60Hz, Refrigerant : R134a, Pressure sensor : 0 to 16 Bar, Refrigerant cylinder capacity : 12 Ltr, Max. System pressure: 20Bar, Power : 900 Watt	MMVC3	8 Nos.	
259	Automotive exhaust five (05)gas analyzer(petrol & Diesel) or Diesel Smoke Meter : Operating voltage : 230 V/ 12V DC, Measuring automobile emission gas like CO,CO ₂ , HC, O ₂ and NOS.	MMVC6	8 Nos.	
260	Annual Maintenance Contract (AMC) of the Automotive exhaust five (05)gas analyzer(petrol & Diesel) or Diesel Smoke Meter as mentioned at Sl. No. 259 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical,	MMVC6A	08 Nos.	

	electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
261	Multi Scan Tool with oscilloscope of required capacity and compatible to the machine.	MMVC21	8 Sets	
262	Annual Maintenance Contract (AMC) of the Multi Scan Tool with oscilloscope as mentioned at Sl. No. 261 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC21A	08 sets	
263	Ultrasonic Injection cleaning equipment, Basket capacity : 6 Ltr, Tank size : 300x155x150 mm, Ultrasonic Power : 150W, Frequency for effective cleaning : 40 KHz, Inner tank and outer body made of Stainless Steel.	MMVC32	8 Nos.	
264	Annual Maintenance Contract (AMC) of the Ultrasonic Injection cleaning equipment as mentioned at Sl. No. 263 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	MMVC32A	08 Nos.	

Tender Schedule - B

List of Instruments & Equipments of the different Trades

Delivery points: Various Govt. ITIs / ITCs throughout the State of West Bengal

Sl. No.	Name & Specifications of the items	Item Code	Tentative Quantity	Make/Brand/Model with specification & description of the item with IS Code/ Mark, if any, to be quoted by the Bidder
01	<p>SS and SC centre lathe (all geared) with minimum specification as: Centre height 150 mm and centre distance 750 mm along with 3 & 4 jaw chucks, auto feed system, safety guard, taper turning attachment, motorized coolant system, lighting arrangement & standard accessories.</p> <p>Heavy duty high precision quality Norton geared Centre Lathe with all accessories. Back plate, Motor Pulley, Dead centre (MT-4) Square tool post, Thread chasing dial indicator, belt guard, Bed length 1350 mm, Bed type 2V & 2 flat, centre height 150mm (250 mm diameter 4 jaw chuck, 200 mm diameter self centering chuck, 3 H.P AC/440v, 1440 rpm motor with push button starter and V belt. Cooling system with separate motor, Standard tool kit for maintenance, Manuals, taper turning attachment, revolving centre, steady and follower rest, carriers.</p>	A1	40 Nos.	
02	<p>Annual Maintenance Contract (AMC) of the Lathe machine as mentioned at Sl. No. 01 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines along with provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A2	40 Nos.	
03	<p>Drilling machine pillar sensitive 0-20 mm cap with swivel table motorised with chuck & key. drill Capacity 20 mm Max. drilling, Motor 3.6 H.P. Spindle speed 150 to 700 rpm. drilling</p>	A3	20 Nos.	

	depth/vertical travel 175 mm, spindle nose taper MT-4, Machine vice 150 mm jaw, Drill chuck with key & arbour, Reduction sleeves MT4-3MT4-2.MT4-1,0-1,1-2,2-3,Standard tool kit for maintenance, Manuals.			
04	Drilling machine bench sensitive 0-12 mm cap motorised with chuck and key. Drilling capacity in steel :-13mm, Morse taper in spindle :- M-1, Spindle traverse :-100mm, Pillar Diameter :- 57.15 mm, Distance between centre of spindle and column front :-149mm, Max. distance between spindle and table :-300mm, Max. distance between spindle and base :-500mm, Table Working surface :- 200 x 200mm (with coolant gutter), Base Working surface :-180 X 210mm, Nos. of spindle speeds :- 4, Range of spindle speeds (rpm) :-480 to 2080, Power of the spindle drive motor :-0.5 H.P,1425 R.P.M Accessories: 1. Machine Lamp- 1Nos. 2. Drill chuck with key 12 mm. 3. Machine vice 100 mm, IS 4502:1999	A4	40 Nos.	
05	Forge portable hand blower 38 cm to 45 cm. Read input power 350/370 W, No load speed 13000 to 16000 rpm, rated voltage 220/240 V, Frequency 50-60 Hz, Max speed 0-16000, net weight 14 kg	A5	20 Nos.	
06	D.E. Pedestal Grinding machine with 200mm diameter wheels rough and smooth with twist drill grinding attachment. Heavy duty, C.I. body double ended pedestal grinder M/C duly fitted with 0.5 HP motor AC/ 220/230V.R.P.M.:- 2880 with rotary switch, a pair of grinding wheels of size 8"x1"x1/2" (one rough & one smooth) a pair of eye shield for Spark protection & a pair of C.I. brackets as tool rests, duly mounted on M.S. Fabricated pedestal stand. With diamond wheel.	A6	20 Nos.	
07	ARC welding table (all metal top) 122 cm X 12 cm X 60 cm with positioner. Table top fabricated by 10mm thick plate and having slot for job clamping, Gear box attachment which manually rotate the job up to 180, Equipment should stop at 0 to 90, Maximum job carrying capacity-10Kg, Table stand fabricated by 75ISMC, Table stand chassis fabricated by 100ISMC, Overhead maximum job clamping height-	A7	20 Nos.	

	700mm (Adjustable), Reverse forward option must be with the equipment. Accessories : Job clamp-4 nos., Over head-1 nos. Adjustable spanner-4 nos. Ring spanner-4 nos. Nut Bolt-8 nos. (Suitable for the equipment)			
08	Portable Electric Drill Machine : 6 -10 mm capacity , no load speed -3150 Rpm 500w, 240v with chuck and key	A8	20 Nos.	
09	Pillar Electric Drill Machine Motorized : 12 -16 mm Capacity, type - desktop, belt Drive, spindle speed -400 - 2420 or 270 -2880 rpm, motor 370/550 watt, 415V, 3 phase, Induction Motor with DOL starter, Bench Type	A9	20 Nos.	
10	Motorised Bench Grinder : Motor -1 HP. 3 ϕ , 415V AC ,50 Hz, speed - 2850 rpm, with DOL starter, grinding wheel(ϕ x w)- 200 x 32 mm , Double side with smooth and rough wheel with Tool Base	A10	20 Nos.	
11	Electrical Machine Trainer –Suitable for demonstrating the construction and functioning of different types of DC machines and AC machines (single phase and three phase). Should be fitted with friction brake arrangement, dynamo meter, instrument panel and power supply unit : DC shunt motor coupled with DC Generator, AC Alternator & mechanical load arrangement all the machines are mounted on heavy duty angle iron frame and Ac induction pole changing motor will be supplied separately. DC shunt motor capacity 1 HP ,220 Volt dc, 1500 rpm , terminal marking Armature (A1, A2), field (F1 F2), insulation class F . DC Generator - shunt/compound/ series , capacity - 0.5 HP , rpm- 1500 , terminal marking Armature (A1, A2), field (F1 F2), output voltage- 220 V - 240 V DC, insulation class F . AC Alternator capacity 0.5 KVA, 1500 rpm, 3 phase , 50 Hz, 415 volt, terminal marking R Y B & neutral. Mechanical load arrangement -Spring Balance 2 Nos. (Tubular type) , 3 phase induction motor pole changing - capacity - 1HP , 415 V, 50 Hz, 1500/3000 rpm. Instrument - 1 no Voltmeter, MI type, range 0- 500 volt. 3 nos. ammeter range - 0-3A , MI type , 1 nos. frequency meter, range -45 -55 Hz, 2 nos. voltmeter range -0 - 300 volt DC , MC type, 1 no ammeter range - 0-10A DC, MC type, 1 no Voltmeter ,MI type, range 0- 300 volt AC , 1 no ammeter range - 0-10A AC MI Type, 1 nos. DOL starter suitable up to 3HP motor,2 nos. 16 Amps DP MCB, 2 Nos. variac with suitable rating, selector switch. all above instruments are mounted in a	A11	20 Nos.	

	panel .			
12	<p>Annual Maintenance Contract (AMC) of the Electrical Machine Trainer as mentioned at Sl. No. 11 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A12	20 Nos.	
13	<p>Motor-Generator (AC to DC) consisting of : Squirrel Cage Induction Motor with star delta starter and directly coupled to DC shunt generator and switch board mounted with regulator, air breaker, ammeter, voltmeter, knife blade switches and fuses, set complete with case iron and plate, fixing bolts, foundation bolts and flexible coupling. Induction Motor rating : 7 HP, 400V, 50 cycles, 3 phase DC Shunt Generator rating : 5 KW, 440V:</p> <p>Squirrel Cage Induction Motor with star delta starter and directly coupled to DC shunt generator and switch board mounted with regulator, air breaker, ammeter, voltmeter, selector switch, Rheostat, knife blade switches and fuses, set with complete panel , fixing bolts, foundation bolts and flexible coupling. Induction Motor rating : 7.5 HP, 415V, AC,50 Hz, 3 phase. DC Shunt Generator rating : 5 KW, 440V , DC (Output voltage varies 110-440v)</p>	A13	20 Nos.	
14	<p>Annual Maintenance Contract (AMC) of the Motor-Generator (AC to DC) as mentioned at Sl. No. 13 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A14	20 Nos.	
15	Used DC Generators-series type for overhauling practice: 2.5 KW 220V DC, (Not more than 5 years old from the date of manufacturing with machine identification no. /Product no. along with	A15	20 Nos.	

	supporting documents thereof)			
16	Used DC Generators- shunt type for overhauling practice:2.5 KW 220V DC, (Not more than 5 years old from the date of manufacturing with machine identification no. /Product no. along with supporting documents thereof)	A16	20 Nos.	
17	Used DC Generators- compound type for overhauling practice : 2.5 KW 220V DC, (Not more than 5 years old from the date of manufacturing with machine identification no. /Product no. along with supporting documents thereof)	A17	20 Nos.	
18	D.C. Shunt Generator with control panel,2.5 KW, 220V: including fitted rheostat : 0 - 300 Ohm, 2 Amp - 1nos., voltmeter : 0-300 volt DC , ammeter : 0 -10 Amps MC type -1 no, ammeter : 0 -5 Amps, MC type -1 no, and circuit breaker 16 amps DP MCB - 1no, All the instruments are fitted in single panel board. 3phase Squirrel cage Induction Motor, 5HP, 415V, AC 50Hz with star delta starter coupled with above DC Generator.	A18	20 Nos.	
19	Annual Maintenance Contract (AMC) of the D.C. Shunt Generator as mentioned at Sl. No. 18 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A19	20 Nos.	
20	D.C. Compound Generator with control panel including fitted rheostat, 0 - 300 Ohm, 2 Amp - 1nos., voltmeter : 0-500 volt DC ,MC type - 1 nos., voltmeter : 0-300 volt DC ,MC type - 1 no, ammeter : 0 -15 Amps -1 no, ammeter : 0 -5 Amps - 1 no, and circuit breaker 16 amps DP MCB -1no, All the instruments are fitted in single panel board, 3phase Squirrel cage Induction Motor, 5HP, 415V, AC 50 Hz with star delta starter coupled with above DC Generator.	A20	20 Nos.	
21	Annual Maintenance Contract (AMC) of the D.C. Compound Generator as mentioned at Sl. No. 20 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance &	A21	20 Nos.	

	breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
22	Diesel Generator Set with change over switch, over current breaker and water-cooled with armature, star-delta connections AC 3 phase, 5 KVA, 240 volt: Generator rating :-7.5 KVA, 415 volt AC, 50 Hz, 2 pole, voltage regulation $\pm 5\%$ - 10%, with exciter, star connection, or higher rating , Engine rating : 11 BHP or 8.1 kw, Water cooled, single cylinder, rpm 3000. 1 nos. control panel consisting of 1 nos. voltmeter 0-500 V MI type, 1 nos. 0-15 Amps MI type ammeter, 1 nos. read type frequency meter, 1 nos. rpm meter, 2 nos. 16 Amps TPN MCB for incomer & outgoing of the panel.	A22	20 Nos.	
23	Annual Maintenance Contract (AMC) of the Diesel Generator Set with change over switch as mentioned at Sl. No. 22 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A23	20 Nos.	
24	D C Series Motor coupled with mechanical load : 0.5 HP , 230 Volts DC, RPM -1500, 4 Pole , insulation class -B . With Spring balance load :- 2 Nos. (Tubular type) , 0 - 25 Kg ,	A24	20 Nos.	
25	Annual Maintenance Contract (AMC) of the D C Series Motor coupled with mechanical load as mentioned at Sl. No. 24 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A25	20 Nos.	
26	DC Shunt Motor 2 to 2.5 KW, 220 volts RPM 1500, with 4 point DC motor starter For 2.5 kw DC	A26	20 Nos.	

	motor, 8-10A.220V, DC. with sophisticate cabinet.			
27	<p>Annual Maintenance Contract (AMC) of the DC Shunt Motor 2 to 2.5 KW, 220 volts RPM 1500 as mentioned at Sl. No. 26 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A27	20 Nos.	
28	<p>DC compound Motor : - 4 pole , 1500 rpm, 2.5 KW ,220 volts DC. STRATER :- 4 point DC motor starter having relay range 8- 10 Amps,</p>	A28	20 Nos.	
29	<p>Annual Maintenance Contract (AMC) of the DC compound Motor as mentioned at Sl. No. 28 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A29	20 Nos.	
30	Single phase Transformer, core type, air cooled 1 KVA , 240/415 V, AC, 50 Hz, two winding, core type, air cooled,	A30	20 Nos.	
31	Three phase transformer, shell type oil cooled with all mounting 3 KVA , 415/240 V, 50 Hz , (Delta/Star) shell type, oil cooled, insulation class - A, vector group - Dyn11, winding - copper wire	A31	20 Nos.	
32	<p>Annual Maintenance Contract (AMC) of the Three phase transformer, shell type oil cooled as mentioned at Sl. No. 31 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A32	20 Nos.	

33	<p>Motor Generator(DC to AC) set consisting of - Shunt Motor with starting compensator and switch directly coupled to AC generator with exciter and switch board mounted with regulator, breaker, ammeter, voltmeter frequency meter, knife blade switch and fuses etc. Set complete with cast iron bed plate, fixing bolts, foundation bolts and flexible coupling. :</p> <p>Shunt Motor rating : 5 HP, 440V , 1500 rpm. AC Generator rating : 3-Phase, 4 wire, 3.5 KVA, 415 Volts, 0.8 pf, 50 Hz, 1500 Rpm, field voltage -200 V Dc . Exciter - Dc shunt Generator , 230 V Dc , 2.1 Amp , 1500 Rpm , 0.5 HP , Insulation class - B with Suitable switch board mounted with regulator, breaker, ammeter, voltmeter frequency meter, knife blade switch and fuses etc. Set complete with cast iron bed plate, fixing bolts, foundation bolts and flexible coupling.</p>	A33	20 Nos.	
34	<p>Annual Maintenance Contract (AMC) of the Motor Generator(DC to AC) set as mentioned at Sl. No. 33 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A34	20 Nos.	
35	<p>AC Squirrel Cage Motor with star delta starter and triple pole iron clad switch fuse. 2 to 3 HP, 3-phase ,400 volts, 50 cycles</p> <p>AC motor : 5 HP, 4 pole,1440 rpm, 3-Phase, 415 V, 50 Hz, insulation class -F. with star delta starter and triple pole MCB.</p>	A35	20 Nos.	
36	<p>Annual Maintenance Contract (AMC) of the AC Squirrel Cage Motor as mentioned at Sl. No. 35 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A36	20 Nos.	

37	AC phase-wound slip ring Motor with starter and switch 5 HP, 400 volts, 3-phase, 50 cycles 1440 Rpm , full Load Current - 7.5 Amp. Insulation class - B	A37	20 Nos.	
38	Annual Maintenance Contract (AMC) of the AC phase-wound slip ring Motor as mentioned at Sl. No. 37 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A38	20 Nos.	
39	A.C. Series type Motor with mechanical load ¼ HP, 230V, 50 Hz, 1500 Rpm.	A39	20 Nos.	
40	Annual Maintenance Contract (AMC) of the A.C. Series type Motor as mentioned at Sl. No. 39 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A40	20 Nos.	
41	Single Phase, Capacitor start capacitor run Motor with starter switch 1HP, 230volt 50 Hz.	A41	20 Nos.	
42	Annual Maintenance Contract (AMC) of the Single Phase, Capacitor start capacitor run Motor as mentioned at Sl. No. 41 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A42	20 Nos.	
43	Universal Motor with starter/switch 0.75 KW / 1 HP, 1425 Rpm, single Phase , 250 V, 50 Hz , Full load Current - 7 Amp. With starter and control panel containing 0 - 300 V volt meter MI type , 0 -	A43	20 Nos.	

	10 Amp MI type Ammeter , With suitable isolating System And indicating Lamp.			
44	<p>Annual Maintenance Contract (AMC) of the Universal Motor with starter/switch as mentioned at Sl. No. 43 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A44	20 Nos.	
45	<p>Stepper Motor with Digital Controller : Uni polar, 12 V Dc , 0.7 Amp , Step angle : 1.8 degree full step / 0.9 degree half step, 200 Step / Rev , Phase/windings : 4/2, Voltage 12 V at 400mA, Resistance / phase : 30 ohm, with microprocessor based controller.</p>	A45	20 Nos.	
46	<p>Annual Maintenance Contract (AMC) of the Stepper Motor with Digital Controller as mentioned at Sl. No. 45 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A46	20 Nos.	
47	Shaded Pole Motor 60 W,240 V	A47	20 Nos.	
48	Synchronous motor 3 Phase, 3 HP, 415V, 50Hz, 4 Pole, with accessories like starter, excitation arrangements	A48	20 Nos.	
49	<p>Annual Maintenance Contract (AMC) of the Synchronous motor 3 Phase as mentioned at Sl. No. 48 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A49	20 Nos.	

50	Thyristor /IGBT controlled D.C. motor drive with tacho-generator feedback arrangement 1 HP, DC Motor : 25 watt, 12 Volt DC, 2000 Rpm , insulation class - B.	A50	20 Nos.	
51	Annual Maintenance Contract (AMC) of the Thyristor /IGBT controlled D.C. motor drive as mentioned at Sl. No. 50 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A51	20 Nos.	
52	Thyristor/IGBT controlled A.C. motor drive with VVVF control 3 Phase, 2 HP, 3 phase, 415 V AC, 50 Hz, input terminal -6, rpm 1500, 1 n. digital voltmeter range 0-500 volt, 1 nos. digital ammeter 0- 10 A AC, 1 nos. digital RPM meter & 1 nos. 16 Amps TPN MCB all above instruments are in one panel .	A52	20 Nos.	
53	Annual Maintenance Contract (AMC) of the Thyristor/IGBT controlled A.C. motor drive as mentioned at Sl. No. 52 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A53	20 Nos.	
54	Washing Machine capacity 6.2 Kg (steam), Top loading, 230 volt, 50 Hz, AC, , direct drive, spin speed 1000 - 1600 RPM, energy rating A+++, fully automatic.	A54	20 Nos.	
55	Machine vice 200 mm swivel base Width of Jaws 200 mm, depth of jaw 60 mm, opening of jaw 150mm,with Tenon slot, Cast Iron or Cast Steel. material of box nut Gun metal	A55	32 Nos.	
56	Machine vice 160 mm swivel base Width of 150 mm, depth of jaw 40 mm, opening of jaw 125mm,with Tenon slot, Cast Iron or Cast Steel, material of box nut Gun metal	A56	16 Nos.	
57	Radius turning attachment Turning radius from 0-50 mm, both concave and	A57	16 Nos.	

	convex.			
58	Universal vice 150 mm Width of 150 mm, depth of jaw 48 mm, opening of jaw 150mm, 360 deg swivelling, with Tenon slot, Cast Iron or Cast Steel, material of box nut Gun metal	A58	8 Nos.	
59	Universal table angle plate size -225X175 mm, height-200mm, length -390 mm. Grade 1,IS-623,Cast Iron.	A59	8 Nos.	
60	shaper indexing center Centre height 100mm	A60	8 Nos.	
61	Shaping machine 450 mm stroke (motorized) with all attachments Length of stroke 450 mm standard table with vertical & cross movement, No of stroke Max.140 per minute, Motor AC/440V 5 H.P, vertical travel of tool post slide 150 mm manually, Automatic lubrication for each slide, All moving guide ways shall be hardened and ground , Standard tool kit for maintenance, Manuals.	A61	16 Nos.	
62	Annual Maintenance Contract (AMC) of the Shaping machine 450 mm stroke (motorized) as mentioned at Sl. No. 61 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A62	16 Nos.	
63	Shaping machine 315 mm stroke (hydraulic) with all attachments 315 mm stroke length (hydraulic type) Power operated, Max, horizontal travel of Table 400 mm, Length & Width of table top400X300 mm with all attachments & accessories,2 H.P., Motor AC/440V,1440 rpm Standard tool kit for maintenance, Manuals.	A63	8 Nos.	
64	Annual Maintenance Contract (AMC) of the Shaping machine 315 mm stroke (hydraulic) as mentioned at Sl. No. 63 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts,	A64	8 Nos.	

	consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
65	Double column planer 1500 x 1000 x 1000 (motorized) with all attachments : single tool post on cross rail with automatic lubricating system on two V guides with standard accessories and fittings, 1500X1000X1000 mm motorised with all attachments. Standard tool kit for maintenance, Manuals, 7.5 H.P capacity motor, open and cross belt drive	A65	8 Nos.	
66	Annual Maintenance Contract (AMC) of the Double column planer 1500 x 1000 x 1000 (motorized) as mentioned at Sl. No. 65 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A66	8 Nos.	
67	Slotter 180 mm stroke (motorized) with all attachments Stroke length 200 mm, Rotary table 325 mm diameter, Longitudinal & cross movement 250 mm & 200 mm, cutting speed of Ram 60 - 90 per minute, Motor 5 H.P, Distance from main column to tool 300 mm. Standard tool kit for maintenance, Manuals.	A67	8 Nos.	
68	Annual Maintenance Contract (AMC) of the Slotter 180 mm stroke (motorized) as mentioned at Sl. No. 67 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A68	8 Nos.	
69	SS and SC centre lathe (all geared) with specification as: Centre height 150 mm and centre distance 1000 mm along with 4 jaw chuck, Taper turning attachment, steadies, auto feed system, safety guard, motorized coolant system, with lighting arrangement and set of lathe tools. Heavy	A69	24 Nos.	

	duty high precision quality Norton geared Centre Lathe with all accessories. Back plate, Motor Pulley, Dead centre (MT-4) Square tool post, Thread chasing dial indicator, belt guard, Bed length 1350 mm, Bed type 2V & 2 flat, centre height 150mm (250 mm diameter 4 jaw chuck, 200 mm diameter self centering chuck, 3 H.P AC/440v, 1440 rpm motor with push button starter and V belt. Cooling system with separate motor, Standard tool kit for maintenance, Manuals, taper turning attachment, revolving centre, steady and follower rest, carriers			
70	<p>Annual Maintenance Contract (AMC) of the SS and SC centre lathe (all geared) as mentioned at Sl. No. 69 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A70	24 Nos.	
71	<p>Tool and cutter grinder 250 mm to admit 450 mm between center-fully motorized work head supplied with tool rest of different types table clamps and other attachments.</p> <p>Precision tool & cutter Grinder Machine. Having admit between centre 450 mm, centre height 150mm, swing table diameter 250 mm & Table size 550X150 mm fitted with 1 H.P. Motor AC/440V, 2800 rpm, Rotary switch, Universal work head, Indexing tooth rest, Set of centre heads, Holder for diamond dresser & tool kit, Radius grinding attachment, Tap lead relieving attachment, Chaser grinding attachment, Drill grinding attachment with 3 jaw chuck with all accessories. Standard tool kit for maintenance, Manuals.</p>	A71	8 Nos.	
72	<p>Annual Maintenance Contract (AMC) of the Tool and cutter grinder 250 mm to admit 450 mm as mentioned at Sl. No. 71 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis</p>	A72	8 Nos.	

	(Financial year is to be mentioned specifically)			
73	<p>Pillar Drill machine 20 mm capacity with drill chuck & key.</p> <p>drill Capacity 20 mm Max. drilling, Motor 3.6 H.P. Spindle speed 150 to 700 rpm. drilling depth/vertical travel 175 mm, spindle nose taper MT-4, Machine vice 150 mm jaw, Drill chuck with key & arbour, Reduction sleeves MT4-3MT4-2.MT4-1,0-1,1-2,2-3,Standard tool kit for maintenance, Manuals.</p>	A73	8 Nos.	
74	<p>Annual Maintenance Contract (AMC) of the Pillar Drill machine 20 mm capacity as mentioned at Sl. No. 73 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A74	8 Nos.	
75	<p>Radial drill 1200 mm area motorized with tapping attachment</p> <p>Drill capacity 50 mm, Max. drilling radius /travel of arm 1200 mm, motor 3.6 H.P. Spindle speed 1500 rpm. drilling depth/vertical travel 300 mm, horizontal travel of arm 600 mm, spindle nose taper MT-5, Machine vice 150 mm jaw, Drill chuck with key & arbour, Reduction sleeves(MT) and sockets, cooling arrangement, Standard tool kit for maintenance, Manuals.</p>	A75	8 Nos.	
76	<p>Annual Maintenance Contract (AMC) of the Radial drill 1200 mm area motorized as mentioned at Sl. No. 75 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A76	8 Nos.	
77	<p>Silicon carbide grinder for carbide tipped tools</p> <p>Wheel diameter 200 mmx25X31.75mm,wheel centre distance 650 mm, Base to centre line of spindle 900 mm, C.I. body diamond dresser, brackets for tool rest one set of extra wheel</p>	A77	8 Nos.	

	(approx)Motor 1H.P, 2880 rpm, AC/440V,Standard tool kit for maintenance, Manuals.			
78	Annual Maintenance Contract (AMC) of the Silicon carbide grinder for carbide tipped tools as mentioned at Sl. No. 77 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A78	8 Nos.	
79	Double ended Pedestal Grinder with 178 mm wheels(one fine and one rough wheel) Wheel diameter 200 mmx25X31.75mm,wheel centre distance 650 mm, Base to centre line of spindle 900 mm, C.I. body diamond dresser, brackets for tool rest one set of extra wheel (approx)Motor 1H.P, 2880 rpm, AC/440V,Standard tool kit for maintenance, Manuals.	A79	8 Nos.	
80	Universal Milling machine with minimum specification as: Table Length x width 1200 x 300 mm having motorized up & down movement along with auto feed arrangement and with following attachments such as: a. Vertical head b. Slotting attachment c. Rack cutting attachment d. Rotary table e. Dividing head f. Adaptors, arbors and collects etc. for holding straight shank drills and cutters from 3 mm to 25 mm. with indexing plate and standard sets of gear(B & S) Table length X width 1200X300 mm with T slots, Longitudinal, Cross & Vertical Travel of table 675X440X340 mm power feed, head tilt 45 deg Up & DOWN, head moved 90 deg Left & Right, 250 mm dia rotary table with indexing device, 150 mm jaw swivel base precision machine Vice, collet, Adapter, Reduction sleeve ISO 40, ,Motor 2H.PAC/440, 1440 rpm, Standard tool kit for maintenance, Manuals,	A80	16 Nos.	
81	Annual Maintenance Contract (AMC) of the Universal Milling machine as mentioned at Sl. No. 80 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair /	A81	16 Nos.	

	<p>rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>			
82	<p>Horizontal Milling Machine with minimum specification as: Table Length x width 1200 x 300 mm having motorized up & down movement along with auto feed arrangement and 150mm Universal vice. Table length X width 1200X300 mm with T slots, Longitudinal, Cross & Vertical Travel of table 675X440X340 mm power feed, 250 mm diameter rotary table with indexing device, 150 mm jaw swivel base precision machine Vice, collet, Adapter, Reduction sleeve ISO 40, ,Motor 2H.P AC/440,1440 rpm, Standard tool kit for maintenance, Manuals</p> <ol style="list-style-type: none"> Rack cutting attachment Rotary table Dividing head Adaptors, arbors and collects etc. for holding straight shank drills and cutters from 3 mm to 25 mm with indexing plate and standard sets of gear(B & S) 	A82	8 Nos.	
83	<p>Annual Maintenance Contract (AMC) of Horizontal Milling Machine as mentioned at Sl. No. 82 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A83	8 Nos.	
84	<p>Vertical Milling Machine with minimum specification as : Table Length x width 1200 x 300 mm having motorized up & down movement along with auto feed arrangement along with 150mm universal vice.</p> <p>Heavy duty precision gear head Vertical Milling machine with all accessories. Having longitudinal feed of table 800 mm automatic. cross and vertical movement 225 & 400 mm manually, fitted with electric coolant pump of 0.10 H.P with other standard accessories, Table size 1350X310 mm.</p>	A84	8 Nos.	

	250 mm dia rotary table with indexing device, 150 mm jaw swivel base precision machine Vice, collet, Adapter, Reduction sleeve ISO 40,2 H.P. AC/440 V,1440 rpm Motor with push button starter and V belt, Standard tool kit for maintenance, Manuals, c. Rack cutting attachment d. Rotary table e. Dividing head f. Adaptors, arbors and collects etc. for holding straight shank drills and cutters from 3 mm to 25 mm with indexing plate and standard sets of gear(B & S), collets (5,10,16,20 mm, 3/8,5/8,1/2 inch, stub arbor A,B,C)			
85	Annual Maintenance Contract (AMC) of the Vertical Milling Machine as mentioned at Sl. No. 84 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A85	8 Nos.	
86	Surface Grinding Machine with minimum specification as: Grinding machine plain surface, wheel dia. 175 mm (or near) with reciprocating table having longitudinal table traverse 200 mm (or near) fully automatic and fitted with adjustable traverse stops, machine to be fully motorized and fitted with ace guards and pumps, tank and pump fittings and also to be supplied with magnetic chuck 250 x 112 mm. Diamond tool holder, set of spanners, grease gun, oil-can and spare grinding wheel for general purpose grinding. Surface grinder: wheel dia : 185mm. Magnatic chuck: 250x120 mm, Diamond tool holder. Set of spanner. Table transverse 200mm. Grease gun. Oil can. Spare grinding wheel for general purpose grinding. Vertical feed least count 0.01 mm, Micro feed least count 0.002 mm, Cross feed least count 0.05 mm, Spindle speed 2800 rpm, motor 1 H.P, with balancing stand, Diamond dresser Tool kit.	A86	8 Nos.	
87	Annual Maintenance Contract (AMC) of the Surface Grinding Machine as mentioned at Sl. No. 86 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance &	A87	8 Nos.	

	breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
88	Cylindrical grinder, Max. grinding length 300 mm Height of centre 130 mm Max. distance between centers 340 mm motor capacity 1H.P. in the work head (Morse taper MT 5 Swivel 90 deg.) and 3H.P. in the wheel head, 1H.P. in the table drive, Fixed and follower steady rest with internal grinding attachment wheel balance in stand, with arbor wheel flange, Standard tool kit for maintenance, Manuals.	A88	8 Nos.	
89	Annual Maintenance Contract (AMC) of the Cylindrical grinder as mentioned at Sl. No. 88 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A89	8 Nos.	
90	CNC Vertical Machining Centre with minimum specification as: Table: size: 500-600 mm x 220-250mm, T-Slot: Standard, Max Load: 120 Kg; Axis: Travel X-axis x Y-axis x Z-axis: 300-350 x 225-250 x 250-300 mm, LM Guideways [X, Y & Z all axis are with Servo Motor with Servo Drive], Feed Rate: 0-10,000 mm/min, Rapid Traverse: 10,000 mm/min, Positioning Accuracy: 0.010 mm, Repeatability: +/- 0.005 mm, Resolution: 0.001 mm; Auto Tool Changer: Automatic, Number of Tool Stations: 8 (Eight), Tool Length (Max): 40 mm, Tool Dia (Max): 16 mm; Spindle; Spindle power: 3.7kW/5.0 HP (continuous rating- Servo Motor with Servo Drive), Spindle Nose Taper: BT-40, Spindle Max. RPM-4000 (Continuous Variable); CNC System: Fanuc Oi Mate TD / Oi TD along with motorized automatic coolant system, automatic lubrication system and pneumatic Vice [Pneumatic Compressor to be supplied]. Power Supply: 415V, 50 Hz, 3 Phase compatible. One set of hand tools, Two sets each of Electrical Circuit Diagram, Machine Operation Manual,	A90	8 Nos.	

	Machine Maintenance Manual, Spare Parts Manual, Fanuc CNC Programming & Operation Manual. Two sets of standard Tools with Tool Holders along with inserts (10 Nos. of each type) where ever applicable.			
91	Annual Maintenance Contract (AMC) of the CNC Vertical Machining Centre as mentioned at Sl. No. 90 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A91	8 Nos.	
92	Multimedia based simulator for CNC technology and interactive CNC part programming software for turning & milling with virtual machine operation and simulation using popular operation control system such as Fanuc, Siemens, etc. (Web-based or licensed based) (Minimum 11 User.)	A92	8 Sets	
93	LCD projector - Minimum 2700 Ansilumens with XGA resolution and large type standard quality screen	A93	8 Nos.	
94	Lathe S.S & S.C (All gear head stock)with Taper turning attachment & Tailstock. Technical specification- Centre height – 150mm, Distance between centre-1000mm, Spindle bore-53mm, Motor capacity- 5.5 kw, Machine should be motorized as per machine specification 7 supply with coolant installation. 4-jaw chuck -150mm And 3-jaw self centering chuck-150mm Related steady rest , follower rest , face plate , driving plate & 4 – way tool post. Quick change gear box for metric & british thread, live center, dead center, revolving center and all others related accessories. With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produced at the time of machine delivery. Same or nearest specification available in present market.	A94	40 Nos.	
95	Annual Maintenance Contract (AMC) of the Lathe S.S & S.C (All gear head stock) as mentioned at Sl. No. 94 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance &	A95	40 Nos.	

	breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
96	Lathe S.S & S.C (All gear head stock)with Taper turning attachment & Tailstock. Technical specification- Centre height – 200mm, Distance between centre-1500mm, Swing over bed- 400mm, Swing over cross slide -260mm, Swing over gap bed- 600mm, Width of gap bed -175mm, Spindle bore-53mm, Motor capacity- 5.5 kw, Machine should be motorized as per machine specification & supply with coolant installation. 4-jaw chuck -250mm And 3-jaw self centering chuck-250mm, Related steady rest , follower rest , face plate , driving plate & 4 –way tool post. Quick change gear box for metric & british thread, live center ,dead center, revolving center and all others related accessories. With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.	A96	8 Nos.	
97	Annual Maintenance Contract (AMC) of the Lathe S.S & S.C (All gear head stock) as mentioned at Sl. No. 96 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A97	8 Nos.	
98	Lathe tool room S.S & S.C (All gear type) with technical specification- Centre height – 150mm, Distance between centre- 1000mm, Motor capacity- 5.5 kw, Machine should be motorized as per machine specification & supply with coolant installation. 4-jaw chuck -250mm And 3-jaw self centering chuck-150mm, Related steady rest , follower rest , face plate , driving plate & 1–way tool post, draw in type collets set upto 25mm, 0.5mm, relieving attachments and all other related accessories. With installation, electrification and	A98	8 Nos.	

	live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.			
99	<p>Annual Maintenance Contract (AMC) of Lathe tool room S.S & S.C (All gear type) as mentioned at Sl. No. 98 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A99	8 Nos.	
100	Grinding Machine pedestal type 200 mm diameter of wheel with wheel guard & vision, hand rest and water guard tank fitted with machine. Motor capacity- 0.75kw, With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.	A100	8 Nos.	
101	<p>Drill machine pillar type-motorized up to 12 mm. Cap.</p> <p>Drill machine pillar type motorized up to 12mm cap, Motor capacity-0.75kw , With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.</p>	A101	8 Nos.	
102	Power saw machine – hydraulic feed system – 400 mm. Blade size. Motor capacity-0.75kw. With installation, electrification and live demonstration should be done and proper test certificate and trade mark in the bed from Government organization should be produce at the time of machine delivery. Same or nearest specification available in present market.	A102	8 Nos.	
103	CNC turning Centre with minimum specification as : Chuck size : 135mm, Between centre distance : 250mm, Travel in X : 100mm, Travel in Z : 200mm, Nos. of tool stations : 8 station turret, Spindle power : 3.7kW (continuous rating), preferably with popular control system like, Fanuc/Siemens along with motorized coolant system CNC Lathe /turning	A103	8 Sets	

	<p>Centre (2 axis) detailed specification :</p> <p>1. MACHINE CAPACITY A. Swing over bed : 350mm, B. Turning diameter : 135mm, C. Distance between centres : 250mm, D. Maximum turning length: 200mm</p> <p>2. SPINDLE A. Bore through spindle : 35mm, B. Maximum spindle speed: 4000RPM, C. Spindle power : 3.7KW, D. Type of drive : AC servo spindle motor (digital), E. Chuck size : 135mm, F. Chuck type : 3-jaw hydraulic power operated</p> <p>3. AXES A. X- axis travel: 100mm or higher, B. Z -axis : 200mm or higher, C. Type of drive –X & Z: AC servo Motor</p> <p>4. TURRET A. Bi-directional tool turret: Electronic /servo/ hydraulic, B. Nos. of tools : 12 Nos, C. Tool shank size : 20mm x 20mm, D. Maximum boring bar diameter: 25mm</p> <p>5. TAIL STOCK A. Quill diameter : 65mm, B. Quill stroke : 70mm, C. Quill : MT-4, D. Quill type : Hydraulic</p> <p>6. CNC SYSTEM A. Control system : Fanuc /Siemens, B. System resolution: 0.001mm, C. Motors & Drives : Compatible with CNC controllers mentioned above, D. Tool number display : On machine operator panel, E. MACHINE CONTROL PANEL: FEED RATE, SPINDLE SPEED OVERRIDE knob, F. MPG : On machine operator panel, G. CNC features : Graphic simulation, programming help, tool offset, MDI, Absolute & Incremental positioning</p> <p>7. STANDARD EQUIPMENT A. VOLTAGE STABILISER (15 kva): 1 Nos. B. Operation manual :1 Nos. C. Maintenance manual: 1 Nos. D. Installation kit :1 Nos. E. MAINTENANCE TOOL KIT: 1 Nos.</p>			
104	<p>Annual Maintenance Contract (AMC) of the CNC turning Centre as mentioned at Sl. No. 103 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A104	8 Sets	

105	Multimedia teach ware/courseware for CNC technology and interactive CNC part programming software for turning & milling with virtual machine operation and simulation using popular operation control system such as Fanuc, Siemens, etc. (Web-based or licensed based) (11 user)	A105	8 Sets	
106	Tool holders to suit the CNC machine for turning, threading, grooving (external & internal), parting off operation, boring, under-cutting with 20 inserts of each operation. External turning holder with 20 inserts, insert type MWLNL: 02 Nos. External turning holder with 20 inserts, insert type MVJNL: 02 Nos. External turning holder with 20 inserts, insert type PDJNR : 02 Nos. Threading holder –External with 20 inserts : 02 Nos. Threading holder- Internal with 20 inserts : 02 Nos. Grooving holder –External with 20 inserts : 02 Nos. Grooving holder- Internal with 20 inserts : 02 Nos. Parting off holder for 2mm width insert with 20 inserts : 02 Nos. Boring holder SCLCL for minimum bore dia. 12mm : 02 Nos. Boring holder SCLCL for minimum bore dia. 16mm : 02 Nos.	A106	8 Sets	
107	Welding Transformer with all accessories (400A, OCV 60–100 V, 60% duty cycle), Input Supply-440V 2Ph.50Hz. +/- 10%, Input KVA-16, No Load Consumption-2Amps, Welding Current range-40-400A, Duty Cycle -60%, O.C.V-90V A/C, Protection Class-IP21, Electrode Size-2-4mm., Type Of Control- Magnetic Moving core type, Type of Cooling-Fan, Class of insulation-Double Fibre Glass With Varnish Covered Flat Conductor, Type Of Core- C.R.N.G.O, M-42 Grade, Nos. Of Output Terminal- 3, MCB rating-63Amps, Weight Approx- 130Kgs., Chasis Type-tyre wheel mounted. Should Have welding amps & volt analog meter. Accessories 70sqmm. HOFR Welding cable -7.5mtr. 70sqmm. HOFR Earth Cable-5mtr. Welding 400Amps insulated Holder-01 nos. Crocodile type Earth Clamp-01 nos. Welding Hand Screen With Glass-01 set. Welding Cheeping Hammer-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm.3 core -5mtr.	A107	16 Sets	
108	Annual Maintenance Contract (AMC) of the Welding Transformer as mentioned at Sl. No. 107 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if	A108	16 Sets	

	<p>required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>			
109	<p>Welding Transformer (or) Inverter based welding machine with all accessories (300A , OCV 60 – 100 V, 60% duty cycle)</p> <p>Welding Inverter IGBT based</p> <p>Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-10,No Load Consumption-0.5 Amps, Duty Cycle - 60%,Welding Current range-10-300A,Arc Force Current-5% of welding current O.C.V-70V D/C, Electrode Size-2-4mm.,</p> <p>Type Of Control-Microprocessor Based Soft switch digital control & PWM, Type of Cooling-Fan, Class of insulation-“H”,MCB rating-40Amps , Protection Class-IP23,Weight Approxx-22Kgs.,Should Have welding amps digital meter, Arc Force Adjustment. Machine Also have over voltage, phase missing, over current and over heat protection.</p> <p>Accessories:-</p> <p>70sqmm. HOFR Welding cable -7.5mtr.70sqmm. HOFR Earth Cable-5mtr.Welding 400Amps insulated Holder-01 nos. Crocodile type Earth Clamp-01 nos. Welding Hand Screen With Glass-01 set. Welding Cheeping Hammer-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm. core -5mtr.</p>	A109	16 Sets	
110	<p>Annual Maintenance Contract (AMC) of the Welding Transformer (or) Inverter based welding machine as mentioned at Sl. No. 109 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A110	16 Sets	
111	<p>D.C Arc welding rectifiers set with all accessories (400 A. OCV 60 – 100 V, 60% duty cycle), Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-14,No Load Consumption-1.5 Amps, Duty Cycle - 60%,Welding Current range-10-400A,O.C.V-80V D/C, Hot Start Current-10-120Amps,Electrode Size-2-5mm., Type Of Control- IGBT Inverter Microprocessor Based Soft switch digital control</p>	A111	16 Sets	

	<p>and user parameter saving system upto 25 user's ,Type of Cooling-Fan, Class of insulation-"F",MCB rating-63Amps, Protection Class-IP21,Weight Approx-30Kgs.,Chasis Type-4"Casting Revolving Wheel mounted. Should Have welding Amps digital meter, Remote control functioned, Hot Start Adjustment. Machine Also have over voltage, phase missing , over current and over heat protection. And anti stick protection.</p> <p>Accessories</p> <p>90sqmm. HOFR Welding cable -7.5mtr. 90sqmm. HOFR Earth Cable-5mtr. Welding 400Amps insulated Holder-01 nos. Crocodile type Earth Clamp-01 nos. Welding Hand Screen With Glass-01 set. Welding Cheeping Hammer-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm.4 core -5mtr. Remote control unit with 10mtr. Cable assembly.</p>			
112	<p>Annual Maintenance Contract (AMC) of the D.C Arc welding rectifiers set as mentioned at Sl. No. 111 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A112	16 Sets	
113	<p>GMAW welding machine 400A capacity with air cooled torch, Regulator, Gas preheater, Gas Hose Standard Accessories</p> <p>Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-14,No Load Consumption-1 Amps, Duty Cycle - 60%,Welding Current range-20-400A,O.C.V-18-52V D/C, Wire Size-0.8-1.2mm., Type Of Control- Semi Synergic Type & Microprocessor Based ,Type of Cooling-Fan, Class of insulation-"H",MCB rating-63Amps , Protection Class-IP23,Weight Approx-70Kgs.,Chasis Type-4"Casting Revolving Wheel mounted. Should Have welding amps & volt digital meter ,Remote control functioned with wire speed and welding current adjust regulator, Crater Adjustment, Auto Burn Back Time Will Be Inbuilt In PCB Card Machine Also have over voltage, phase missing ,over current and over heat protection, Wire feeder type-Servo 2roll Drive with euro connector, Welding Torch type-Gas cooled 400Amps ,euro connection type.CO2 Preheater</p>	A113	16 Sets	

	<p>Voltage-110V A/c.</p> <p>Accessories</p> <p>Copper 35sqmm. HOFR Welding cable -7.5mtr.</p> <p>Copper 35sqmm. HOFR Earth Cable-5mtr. Gas Cooled MIG Welding Torch-01 nos. Crocodile type Earth Clamp-01 nos. Remote Control Cable-10mtr. Wire feeder interconnection cable-7.5mtr. Welding Full Helmet With Glass-01 set. Anti Spatter Spray-01 nos. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm.4 core -5mtr. Flux Cored MIGWire-1.2mm one roll. CO2 Cylender-7CuM-01 Pcs.,CO2 SSDG Regulator-01 nos.CO2 Preheater with core assembly-01 set.,CO2 Flowmeter-01 nos.,CO2 Transparent Nylon Hose Pipe-10mtr.CO2 Cylinder Holding Stand, Torch Tips, Holder, Ceramic Diffuser, Front Cap-05 nos. each.</p>			
114	<p>Annual Maintenance Contract (AMC) of the GMAW welding machine 400A capacity as mentioned at Sl. No. 113 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A114	16 Sets	
115	<p>AC/DC GTAW welding machine with water cooled torch 300 A, Argon regulator, Gas hose, water circulating system and standard accessories.</p> <p>Input Supply-440V 3Ph.50Hz. +/- 10%,Input KVA-10,No Load Consumption-0.5 Amps, Duty Cycle - 60%,Welding Current range-20-300A,O.C.V-65V D/C & A/C ,MMA Electrode Size-2-4mm.,Tunsten Electrode Size-2mm-3.15mm. Type Of Control-Microprocessor Based Digital Soft Switch Control & PWM ,Up slope /Down Slope Time-1-10Sec,Gas Pre Flow Time-1-10Sec,Type of Cooling-Fan, Class of insulation-"F",MCB rating-40Amps , Protection Class-IP23,Weight Approxx-32Kgs.,Should Have welding amps digital meter, Remote control functioned, Hot Start / Arc Force /Background Current Adjustment,4T & 2T Switching Function, TIG & MMA Dual Functioned, Water Cooling Unit Inbuilt in Main power source ,Machine Also have over voltage, phase missing ,over current and over heat protection.</p> <p>Accessories</p>	A115	16 Sets	

	<p>Copper 35sqmm. HOFR Welding cable -7.5mtr. Copper 35sqmm. HOFR Earth Cable-5mtr. Water Cooled GTAW Torch-01 nos. Crocodile type Earth clamp -01 nos. Remote Control Cable-10mtr. Welding Full Helmet With Glass-01 set. Wire Brush-01 nos. Lather Hand Gloves-01 pair. Power Connection Cable 4sqmm 4 core -5mtr. Tungsten Electrode-2mm,2.5mm & 3mm -10nos. Each, Argon Cylinder-7CuM-01 Pcs., Argon SSDG Regulator-01 nos. Argon Flowmeter-01 nos., Argon Transparent Nylon Hose Pipe-10mtr.Argon Cylinder Holding Stand, Torch Collet, 10 nos. Ceramic Nozzle-10 nos. (Suitable for above machine)</p>			
116	<p>Annual Maintenance Contract (AMC) of the AC/DC GTAW welding machine as mentioned at Sl. No. 115 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A116	16 Sets	
117	<p>Air Plasma cutting equipment with all accessories, capacity to cut 12 mm clear cut, Input Supply-220V 3Ph.50Hz. +/- 10%,Input KVA-6,No Load Consumption-50watt, Duty Cycle -60%,Cutting Current range-20-45 A, Cutting Capacity-15mm Genuine Fine Cut & 20mm Severance Cut , Pierce rating-10mm , O.C.V-280V D/C, Type Of Control-IGBT Microprocessor Based Digital Soft Switch Control with PWM ,Type of Arc Starting-Pilot Arc, Pilot Arc Current-10A,Type of Cooling-Fan, Class of insulation-"H" , , Protection Class-IP23,Weight Approx-7Kgs.,Should Have in built air regulator & preset air pressure , euro torch connection ,Air Pressure gauge, Machine Also have phase missing and over heat protection, fault indication. Accessories Copper 25sqmm. HOFR Earth Cable -5mtr. Crocodile type earth clamp-01 nos. Hand Cutting plasma Torch model-TRF-45-6-CC1 with 4mtr. air cooled cable assembly-01 nos. Air filter cum regulator-01 nos. Power Connection Cable 6sqmm. 4core-5mtr. Compressor Hose Pipe-5mtr. Cutting Electrode & Nozzles (consumables)-10set. Pliers-01nos. Cutting Green Goggles-01 nos. Lather Hand Gloves-01 pair, Lather Apron-01 Pcs.</p>	A117	16 Sets	

118	<p>Annual Maintenance Contract (AMC) of Air Plasma cutting equipment as mentioned at Sl. No. 117 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A118	16 Sets	
119	<p>Air compressor suitable for above air plasma cutting system.</p> <p>Input Supply-440V 3Ph.50Hz.+/-10% Input Load-8.5Amps,Motor Rating-5H.P 1440RPM,Tank Capacity-250L,Compressor Type-Double Piston Oil Immersed, Air Flow Rate-90PSI Continuous, Max. Air Flow Rate-125PSI.Overload Trip-85 PSI(Adjustable)</p> <p>Accessories</p> <p>10mm. Transparent Hose Pipe-05mtr. Starter Switch-01 Nos. Over Load Protector Switch-01 Nos. Pressure Gauge-01 Nos. Power Connection Cable 2.5sqmm 4 core-5mtr. Mobil Suitable for piston-as required</p>	A119	16 Nos.	
120	<p>Annual Maintenance Contract (AMC) of Air compressor as mentioned at Sl. No. 119 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A120	16 Nos.	
121	<p>Spot welding machine to 15 KVA with all accessories</p> <p>Input supply-440V A/c 2Ph.1N,50Hz.+/- 10%,Input Load-15KVA,Welding Current Range-1000-5000A,OCV-3.2V A/c, Type of Control-Thyristorised Digital Soft Switch ,Welding time range(auto mode)-1-10sec.Throat clearance-200mm,Stroke Length-150mm.Transformer Type-Low linkage, Max Thickness Of MS Sheet for welding as lap joint-1.5+1.5mm,Protection Class-IP26,Type of electrode cooling-Water, Type of stroke-pneumatic</p>	A121	16 Sets	

	<p>,Type of transformer cooling-Fan,Weight-250Kgs. Approx. Machine should have motorized water cooling unit external fitted, input volts and amps display, electronics soft switch timer.</p> <p>Accessories:</p> <p>Pistol type hand welding gun with 3mtr. X 95sqmm. HOFR cable assembly-02 nos. Power connection cable-6sqmm. 3 core-5mtr. Copper welding arm electrode-02 set. Air Compressor-80PSI-01 nos.</p>			
122	<p>Annual Maintenance Contract (AMC) of the Spot welding machine to 15 KVA as mentioned at Sl. No. 121 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A122	16 Sets	
123	<p>Portable gas cutting machine capable of cutting Straight & Circular with all accessories</p> <p>Speed range :- 125-400mm/min Cutting capacity:- Square edge 200mm thick steel. 45degree Bevel cutting 150mm thick steel circles from 150mm to 2000mm dia. By using circle cutting attachments.</p> <p>Fuel gas acetylene / LPG by selecting the appropriate nozzle power supply 220 volts A/C 50Hz. Gas connection:- ¼ G.</p> <p>Accessories:-</p> <p>Oxygen SSDG regulator-01 Nos., Acetylene SSDG regulator-01 Nos. Flash back arrestor cylinder side-02 Nos. Oxygen and acetylene hose pipe 10 mtr. Each power connection cable -10 mtr.X2.5 Sq. mtr. 3 core with 15 Amp. Plug top.</p>	A123	16 Sets	
124	<p>Pedestal grinder fitted with coarse and medium grain size grinding wheels diameter 300 mm</p> <p>Pedestal body – made of heavy duty angle frame of 65X65X6 mm with 3mm m/s sheet fabricating.</p> <p>Spindle- is of large diameter, mounted on heavy duty ball bearings. Fitted with one coarse and one medium grain wheel Dia-300mm. input supply -440 Volt. 3 ph. Input load 1.5 KW. Motor rating – 2 H.P. 1500 rpm. Complete with starter and ELCB 25 Amps. & 60 Amps.</p>	A124	16 Sets	
125	<p>Bench grinder fitted with fine grain size silicon carbide green grinding wheel diameter 150 mm</p> <p>1/2H.P. 415 Volt.3 Phase 50Hz 2850 rpm motor</p>	A125	16 Sets	

	fitted with 2 nos. 150 silicon grinding wheel one rough & one fine , with tools rest.			
126	AG 4 Grinder : 670W, Volt: 220-230V, Amp: 3A, Frequency, 50/60Hz, 11000rpm Wheel Diameter: 4", Applications: cutting, grinding, polishing pads	A126	32 Nos.	
127	Suitable Arc welding table with positioner Size of table-1000mm(L)x900mm(H)x600mm(W), Table top fabricated by 10mm thick plate and having slot for job clamping, Gear box attachment which manually rotate the job up to 180, Equipment should stop at 0 to 90, Maximum job carrying capacity-10Kg, Table stand fabricated by 75ISMC, Table stand chassis fabricated by 100ISMC, Overhead maximum job clamping height-700mm (Adjustable), Reverse forward option must be with the equipment. Accessories: Job clamp-4 nos., Over head-1 nos. Adjustable spanner-4 nos. Ring spanner-4 nos. Nut Bolt-8 nos. (Suitable for the equipment)	A127	96 Nos.	
128	Hand shearing machine capacity to cut 6 mm sheets and flats	A128	16 Nos.	
129	Power saw machine 14" Complete hydraulic system. Good quality.	A129	16 Nos.	
130	Portable drilling machine (Cap. 6 mm)	A130	16 Nos.	
131	Oven, electrode drying 0 to 350°C, 10 kg capacity	A131	16 Nos.	
132	Oxy Acetylene Gas cutting blow pipe, Cutting capacity -300mm thickness MS plate., type-blow pipe mixing, head angle 90degree, torch connection -3/8 BSP RH for oxygen, 3/8 BSP LH flue gas.	A132	32 Sets	
133	Portable abrasive cut-off machine Cutting capacity – at rectangle 100X196mm, square-119X119mm & L profile- 130X130mm. No load speed 3800 rpm, Saw blade dia. 355mm, blade bore 25.4mm, wat.2000.	A133	8 Nos.	
134	Welding Simulators for MMAW Input supply-220 V 50Hz.welding current-6Amps.Arc Voltage-30-35VDC,welding speed-1-12mm/s, Arc gap length-0.5-6mm,OCV-55VDC,Angle of inclination of welding tool imitator electrode , deg, within range-45 +/- 5% , Weight-88.35 Kg. Simulator will be virtual type with real arc filling, Support 3 different process of welding (MMAW) , Negligible fumes, Arc length ,welding speed and angles of electrode inclination adjustment, report will be generated-Arc length time graph, welding speed time graph, Time indicator, Error indicator on longitudinal angle of welding tool Accessories:	A134	8 Nos.	

	Inter connection cable-3mtr. TIG torch-01 nos. MIG torch-01 nos. MMAW welding torch-01 nos. Standard base plate suitable for 1g-5g & 1f-4f Printer to report pint -01 nos. UPS-01 nos.			
135	<p>Welding Simulators for GTAW, Input supply-220 V 50Hz.welding current-6Amps.Arc Voltage-30-35VDC,welding speed-1-12mm/s, Arc gap length-0.5-6mm,OCV-55VDC,Angle of inclination of welding tool imitator electrode , deg, within range-45 +/- 5% , Weight-88.35 Kg. Simulator will be virtual type with real arc filling, Support 3 different process of welding (GTAW) , Negligible fumes, Arc length ,welding speed and angles of electrode inclination adjustment, report will be generated- Arc length time graph, welding speed time graph, Time indicator, Error indicator on longitudinal angle of welding tool</p> <p>Accessories: Inter connection cable-3mtr. TIG torch-01 nos. MIG torch-01 nos. MMAW welding torch-01 nos. Standard base plate suitable for 1g-5g & 1f-4f Printer to report pint -01 nos. UPS-01 nos.</p>	A135	8 Nos.	
136	<p>Welding Simulators for GMAW, Input supply-220 V 50Hz.welding current-6Amps.Arc Voltage-30-35VDC,welding speed-1-12mm/s, Arc gap length-0.5-6mm,OCV-55VDC,Angle of inclination of welding tool imitator electrode , deg, within range-45 +/- 5% , Weight-88.35 Kg. Simulator will be virtual type with real arc filling, Support 3 different process of welding (GMAW) , Negligible fumes, Arc length ,welding speed and angles of electrode inclination adjustment, report will be generated- Arc length time graph, welding speed time graph, Time indicator, Error indicator on longitudinal angle of welding tool</p> <p>Accessories : Inter connection cable-3mtr. TIG torch-01 nos. MIG torch-01 nos. MMAW welding torch-01 nos. Standard base plate suitable for 1g-5g & 1f-4f Printer to report pint -01 nos. UPS-01 nos.</p>	A136	8 Nos.	
137	AC motor 1/4 HP	A137	12 Nos.	
138	Portable electric Drill Machine : Input Power- 220-250 V, Max. Drilling Capacity – 13 mm, Full Load Amp. 1.3 A, RPM – 700.	A138	12 Nos.	
139	Air conditioned CRDI Vehicle in running condition (Not more than 05 years old & Maximum running Kilometre upto 60,000 with proper up to date document of Motor Vehicle Tax submission, Insurance certificate, Fitness certificate(if applicable), Pollution certificate, Registration certificate / Blue Book of the Vehicle, Details of	A139	12 Nos.	

	previous servicing records)--LMV Length : 3995mm, Width : 1695mm, Height : 1555mm, Engine Displacement 1248 cc, BHP 74 bhp @ 4000 rpm, Torque 190 Nm @ 2000 rpm, Nos. of Cylinders : 4. Transfer of ownership / registration to be made in favour of the consignee Institute as per Motor Vehicle Act.			
140	Annual Maintenance Contract (AMC) of the Air conditioned CRDI Vehicle in running condition as mentioned at Sl. No. 139 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines along with provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A140	12 Nos.	
141	Bench lever shears 250mm Blade x 3mm Capacity	A141	12 Nos.	
142	Diesel engine - CRDI- 4 stroke for Dismantling and assembling with swivelling stand. Engine Displacement: 1405 cc, No of cylinder : 4, Max. Power : 76 bhp @ 4500 RPM, Max torque : 135 Nm @ 2500 RPM.	A142	12 Nos.	
143	Annual Maintenance Contract (AMC) of the Diesel engine - CRDI- 4 stroke for Dismantling as mentioned at Sl. No. 142 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines along with provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A143	12 Nos.	
144	Diesel engine(Running condition) (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Stationary type Vertical, Double Cylinder, Air-Cooled, Four-Stroke Cycle, Compression, Ignition Diesel Engine. Cylinder : 02, CC: 1.56 LTR, RPM: 1500.	A144	12 Nos.	
145	Annual Maintenance Contract (AMC) of the Diesel engine(Running condition) as mentioned at Sl. No. 144 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair /	A145	12 Nos.	

	rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
146	Discrete component trainer/ Basic electronics trainer	A146	12 Nos.	
147	Annual Maintenance Contract (AMC) of the Discrete component trainer/ Basic electronics trainer as mentioned at Sl. No. 146 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A147	12 Nos.	
148	Drilling machine bench Input power : 680 Watt, Max. drilling capacity : 12mm, Spindle travel: 60mm, Working radius: 143mm, Working size : 205x205mm, column size: 45x500mm.	A148	12 Nos.	
149	Dual Magnetization Yoke AC / HWDC, 230 VAC, 50Hz	A149	12 Nos.	
150	Grinding machine (General purpose) D.E. pedestal with 300 mm diameter wheel rough and smooth, Motor Power: 1 HP, RPM: 3000, Single phase,	A150	12 Nos.	
151	Heavy Commercial vehicle type(without body on frame) Engine Description : BSIV Common Rail Engine Capacity : 5883 cm3 Nos. of Cylinders : 6 Inline Engine Output : 132.5 kW @ 2500 r/min Torque : 700 Nm at 1200 - 1600 r/min Gross Vehicle Weight : 25000 KG Ladder Type Heavy Duty Frame with Riveted/ Bolted Cross Members	A151	12 Nos.	
152	Annual Maintenance Contract (AMC) of the Heavy Commercial vehicle type as mentioned at Sl. No. 151 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if	A152	12 Nos.	

	required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
153	Hydraulic jack HI-LIFT type 3 ton and 5 ton capacity	A153	12 Nos.	
154	Pneumatic rivet gun with standard accessories. Rivet setting capacity : All material rivet, Rivet range : 3.2 mm to 4.8 mm, Min. Pressure : 5Bar, Max. Pressure: 7Bar, Stroke Max. 26mm, Cycle time : 3.9sec, Free air volume required @6Bar- 4.3Ltr.	A154	12 Nos.	
155	Spring Tension Tester, Capacity : 5Kgf to 200Kgf, Type: Universal Tension Compression, Least count : 0.01mm, Measuring unit : N, Kgf, Lbf, Display: Microcontroller based 6 digit digital display system and LCD, Max. Deflection : 300mm, Power required : 180VAC to 260VAC @ 50Hz.	A155	12 Nos.	
156	Trolley type portable air compressor : Single Cylinder, Single Stage, Input power: 220 V AC, Motor: 2 HP, Tank capacity: 45 Ltr, Working pressure: 6.5 kg/sq cm. along with accessories.	A156	12 Nos.	
157	Annual Maintenance Contract (AMC) of the Trolley type portable air compressor as mentioned at Sl. No. 156 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A157	12 Nos.	
158	Working Condition of Diesel Engine -CRDI - 4 stroke Engine (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereoff) Assembled with fault simulation board. Displacement 2179 cc, No of cylinder : 4, Max Power 140 bhp @ 4000 RPM, Max Torque 320 Nm @ 1700 RPM, Fitted with all accessories and Assembly with fault simulation board.	A158	12 Nos.	
159	Annual Maintenance Contract (AMC) of the Working Condition of Diesel Engine -CRDI - 4 stroke Engine as mentioned at Sl. No. 158 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair /	A159	12 Nos.	

	rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
160	Split phase induction motor, Specifications : 1/4 hp, 230 V, Rolled sheet body material, Certified with IEC,IS,NEMA standard and UL, motor with Nema48 Frame, easy to operate even on low voltage, Single phase motor with permanent split capacitor type.	A160	12 Nos.	
161	Annual Maintenance Contract (AMC) of the Split phase induction motor as mentioned at Sl. No. 160 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A161	For 12 Nos.	
162	Capacitor start induction motor, Specifications : 1/2 Hp, 230 V, Rolled sheet body material, Certified with IEC,IS,NEMA standard and UL, motor with Nema Frame; Single phase motor with capacitor start induction type,	A162	8 Nos.	
163	Annual Maintenance Contract (AMC) of the Capacitor start induction motor as mentioned at Sl. No. 162 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A163	8 Nos.	
164	AC 3 Phase motor, 400/50 Hz, Specifications : 2 H.P., Number of poles two, speed 3000 rpm, 3 phase, 400 V, 50Hz, Frame size 63-400 for TEFC, Construction : GD ALUMINIUM AND CAST IRON	A164	8 Nos.	
165	Annual Maintenance Contract (AMC) of the AC 3 Phase motor as mentioned at Sl. No. 164 for 03	A165	8 Nos.	

	<p>years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>			
166	Grinding Machine : Specifications: 200mm,3000rpm,Double ended 1/2 hp	A166	8 Nos.	
167	Two stage rotary vacuum pump : Specifications capacity approx. 60 - 100 rmp capable of evacuating to 50 microns of Hg and fitted with gas ballast, anti suck back valve and single phase motor	A167	8 Nos.	
168	Air compressor : Specifications Two stage for oil - less dry air, with rush proof tank assembly, heater and controls max. pr. 10 kgs /sq.m Capacity 45 ltr. Motor 1 hp.	A168	8 Nos.	
169	<p>Annual Maintenance Contract (AMC) of the Air compressor as mentioned at Sl. No. 168 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A169	8 Nos.	
170	Reciprocating compressor : Specifications provision of capacity control etc. for demonstration. Capacity 2 ton open type.	A170	8 Nos.	
171	<p>Annual Maintenance Contract (AMC) of the Reciprocating compressor as mentioned at Sl. No. 170 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A171	8 Nos.	
172	Circulating water pump (small) : Specifications 0.5	A172	8 Nos.	

	H.P with stainless steel tank capacity 20 liters within let/ outlet provision.			
173	Rotary hermetic compressor, Specifications: 2 Ton	A173	8 Nos.	
174	Screw compressor, Specifications : 5Ton	A174	8 Nos.	
175	Annual Maintenance Contract (AMC) of the Screw compressor as mentioned at Sl. No. 174 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A175	8 Nos.	
176	Air Brake Assembly, Dual circuit full Air "S" cam brake, Brake drum dia. : 408 mm, Lining area : Front : 1410 sq.cm, Rear: 1410 sq.cm.	A176	8 Nos.	
177	Annual Maintenance Contract (AMC) of the Air Brake Assembly, Dual circuit full Air "S" cam brake as mentioned at Sl. No. 176 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A177	8 Nos.	
178	Fuel feed pump for Diesel, Fitted with Six Cylinder (Approx 6000CC) Diesel Engine. Plunger type.	A178	8 Nos.	
179	Annual Maintenance Contract (AMC) of the Fuel feed pump for Diesel as mentioned at Sl. No. 178 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A179	8 Nos.	
180	Fuel Injection Pump (Diesel) In-line, Fitted with Six Cylinder (Approx 6000CC) Diesel Engine with mechanical governor.	A180	8 Nos.	

181	<p>Annual Maintenance Contract (AMC) of the Fuel Injection Pump (Diesel) In-line as mentioned at Sl. No. 180 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A181	8 Nos.	
182	Fuel Injection Pump Dismantling Tool Kit/ Universal Vice	A182	8 Nos.	
183	<p>Annual Maintenance Contract (AMC) of the Fuel Injection Pump Dismantling Tool Kit as mentioned at Sl. No. 182 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A183	8 Nos.	
184	<p>Fuel Injection Pump VE pump along with special tools and accessories : Fitted with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, VE pump along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.</p>	A184	8 Nos.	
185	<p>Annual Maintenance Contract (AMC) of the Fuel Injection Pump VE pump along as mentioned at Sl. No. 184 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A185	8 Nos.	
186	Fuel Injection Pump Pressure Time (PT) pump along with special tools and accessories: Fitted	A186	8 Nos.	

	with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, Pressure Time (PT) pump along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.			
187	Annual Maintenance Contract (AMC) of the Fuel Injection Pump Pressure Time (PT) pump as mentioned at Sl. No. 186 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A187	8 Nos.	
188	Fuel Injection Pump Distributor fuel rotary pump(DPC) pump along with special tools and accessories : Fitted with pneumatic governor, with Maximum and minimum speed governor with variable speed flyweight governor, Distributor fuel rotary pump (DPC) pumps along with special tools and accessories. 4 cylinder type, new and branded item - 1 each, fitted in stand with all accessories and connection. Genuine parts.	A188	8 Nos.	
189	Annual Maintenance Contract (AMC) of the Fuel Injection Pump Distributor fuel rotary pump(DPC) as mentioned at Sl. No. 188 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A189	8 Nos.	
190	Multipoint Fuel injection pump : Fitted with 4 cylinder engine.	A190	16 Nos.	
191	Annual Maintenance Contract (AMC) of the Multipoint Fuel injection pump as mentioned at Sl. No. 190 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if	A191	16 Nos.	

	required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
192	Portable electric Drill Machine : Input Power- 220-250 V, Max. Drilling Capacity – 13 mm, Full Load Amp. 1.3 A, RPM – 700.	A192	8 Nos.	
193	Vacuum assisted hydraulics brake assembly with vacuum booster	A193	8 Nos.	
194	Annual Maintenance Contract (AMC) of the Vacuum assisted hydraulics brake assembly as mentioned at Sl. No. 193 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A194	8 Nos.	
195	Air conditioned CRDI Vehicle in running condition (Not more than 05 years old & Maximum running Kilometer upto 60,000 with proper up to date document of Motor Vehicle Tax submission, Insurance certificate, Fitness certificate(if applicable), Pollution certificate, Registration certificate / Blue Book of the Vehicle, Details of previous servicing records)-LMVLength:3995mm, Width:1695mm, Height:1555mm, Engine Displacement1248 cc, BHP74bhp@4000rpm, Torque190Nm@2000rpm, Nos. of Cylinders : 4Transfer of ownership / registration to be made in favour of the consignee Institute as per Motor Vehicle Act.	A195	8 Nos.	
196	Annual Maintenance Contract (AMC) of the Air conditioned CRDI Vehicle in running condition as mentioned at Sl. No. 195 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A196	8 Nos.	
197	Arbor press 2 TON Capacity	A197	8 Nos.	

198	Diesel engine - CRDI- 4 stroke for Dismantling and assembling with swivelling stand. Engine Displacement : 1405 cc, No of cylinder : 4, Max. Power : 76 bhp @ 4500 RPM, Max torque : 135Nm @ 2500 RPM.	A198	8Nos.	
199	Annual Maintenance Contract (AMC) of the Diesel engine - CRDI- 4 stroke as mentioned at Sl. No. 198 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A199	8 Nos.	
200	Diesel engine(Running condition) (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Stationary type Vertical, Double Cylinder, Air-Cooled, Four-Stroke Cycle, Compression Ignition Diesel Engine. Cylinder : 02, CC: 1.56 LTR, RPM: 1500.	A200	8 Nos.	
201	Annual Maintenance Contract (AMC) of the Diesel engine(Running condition) as mentioned at Sl. No. 200 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A201	8 Nos.	
202	Drilling machine bench, Input power : 680 Watt, Max. drilling capacity: 12mm, Spindle travel: 60mm, Working radius: 143mm, Working size: 205x205mm, column size: 45x500mm.	A202	8 Nos.	
203	Four stroke petrol engine with CNG setup-working condition Engine (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) Displacement:796 cc, Nos. of Cylinders : 3, Max. Power : 47 bhp@6000 RPM, Max.	A203	8 Nos.	

	torque:69Nm@3500 RPM, Alternate fuel: petrol			
204	<p>Annual Maintenance Contract (AMC) of Four stroke petrol engine with CNG setup as mentioned at Sl. No. 203 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A204	8 Nos.	
205	Grinding machine (General purpose) : D.E. pedestal with 300 mm diameter wheel rough and smooth, Motor Power: 1 HP, RPM: 3000, Single phase,	A205	8 Nos.	
206	<p>Heavy Commercial vehicle type (without body on frame)</p> <p>Engine Description : BSIV Common Rail</p> <p>Engine Capacity : 5883 cm³</p> <p>Nos. of Cylinders : 6 Inline</p> <p>Engine Output : 132.5 kW @ 2500 r/min</p> <p>Torque: 700 Nm at 1200 - 1600 r/min</p> <p>Gross Vehicle Weight : 25000 KG</p> <p>Ladder Type Heavy Duty Frame with Riveted/ Bolted Cross Members</p> <p>Transfer of ownership / registration to be made in favour of the consignee Institute as per Motor Vehicle Act.</p>	A206	8 Nos.	
207	<p>Annual Maintenance Contract (AMC) of the Heavy Commercial vehicle type as mentioned at Sl. No. 206 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A207	8 Nos.	
208	<p>MPFI petrol engine with swivelling stand along with special tools for dismantling and assembly.</p> <p>Engine Displacement : 998 cc, No of cylinder : 3, Max. Power : 67 BHP @ 6200 RPM, Max torque : 90Nm @ 3500 RPM.</p>	A208	8 Nos.	
209	Annual Maintenance Contract (AMC) of the MPFI petrol engine with swivelling stand as mentioned	A209	8 Nos.	

	<p>at Sl. No. 208 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>			
210	<p>Petrol engine 2 stroke motor cycle / Scooter along with special tools and accessories. Engine capacity: 175 cc, Max power : 9 BHP @ 5000 RPM, No of cylinder : 1, Air cooled.</p>	A210	8 Nos.	
211	<p>Annual Maintenance Contract (AMC) of the Petrol engine 2 stroke motor cycle / Scooter as mentioned at Sl. No. 210 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A211	8 Nos.	
212	<p>Trolley type portable air compressorSingle Cylinder, Single Stage, Input power : 220 V AC, Motor : 2 HP, Tank capacity : 45 Ltr, Working pressure : 6.5 kg/sq cm. along with accessories.</p>	A212	8 Nos.	
213	<p>Annual Maintenance Contract (AMC) of the Trolley type portable air compressorSingle Cylinder as mentioned at Sl. No. 212 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A213	8 Nos.	
214	<p>Tube/ tyre vulcanizing machine, 220V, 500watt, Timer scope: 0min. To 120min. Curing head size: 8cm to 17cm with Truck Valve stem, Depth: 15cm, Temperature Range: 140 - 150 degree centigrade,</p>	A214	8 Nos.	
215	<p>Annual Maintenance Contract (AMC) of the Tube/</p>	A215	8 Nos.	

	<p>tyre vulcanizing machine as mentioned at Sl. No. 214 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>			
216	Two post car lift , capacity 4000 kg	A216	8 Nos.	
217	<p>Annual Maintenance Contract (AMC) of the Two post car lift as mentioned at Sl. No. 216for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A217	8 Nos.	
218	<p>Tyre Changer Machine, Ring clamping outer : 11" to 19", Inner: 12" to 22", Bead breaker force: 1800Kg, Max. rotation torque : 1100Nm, Max. rim dia.:800mm, Max. rim width : 320mm, Working pressure : 6 to 8 Bar, Motor Power : 0.75/1.0 Kw.</p>	A218	8 Nos.	
219	<p>Annual Maintenance Contract (AMC) of the Tyre Changer Machine, Ring clamping outer as mentioned at Sl. No. 218 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>	A219	8 Nos.	
220	<p>Wheel alignment Machine – computerized 3D</p> <p>Wheel size range : 10" to 20",</p> <p>Total toe : $\pm 20^\circ$ with $\pm 2^\circ$, Individual toe : $\pm 20^\circ$ with $\pm 2^\circ$,</p> <p>Camber : $\pm 18^\circ$ with $\pm 5^\circ$, Castor : $\pm 18^\circ$ with $\pm 5^\circ$,</p> <p>Kingpin inclination : $\pm 18^\circ$ with $\pm 5^\circ$,</p> <p>Wheel set back : $\pm 15^\circ$ with $\pm 2^\circ$,</p>	A220	8 Nos.	

	Load capacity of turn cables: 600Kg, Power supply: 200V single phase.			
221	Annual Maintenance Contract (AMC) of the Wheel alignment Machine as mentioned at Sl. No. 220 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A221	8 Nos.	
222	Wheel balancing machine, Balancing accuracy : 1g, Cycle time : 5 sec. To 8 sec. Rim width 1.5" to 20", Rim dia. : 10" to 30", Wheel dia. Max.: 850mm, Wheel weight Max.: 65Kg, Power supply : 230V single phase.	A222	8 Nos.	
223	Annual Maintenance Contract (AMC) of the Wheel balancing machine, Balancing accuracy as mentioned at Sl. No. 222 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note : Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A223	8 Nos.	
224	Working Condition of Diesel Engine -CRDI - 4 stroke Engine (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereoff) Assembly with fault simulation board. Displacement 2179 cc, No of cylinder: 4, Max Power 140 bhp @ 4000 RPM, Max Torque 320 Nm @ 1700 RPM, Fitted with all accessories and Assembly with fault simulation board.	A224	8 Nos.	
225	Annual Maintenance Contract (AMC) of the Working Condition of Diesel Engine -CRDI - 4 stroke Engine as mentioned at Sl. No. 224 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if	A225	8 Nos.	

	required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)			
226	Working Condition of petrol MPFI Engine (Not more than 5 years old from the date of manufacturing with machine identification nos. / product nos. along with supporting documents thereof) assembly with fault simulation board. Engine Displacement 796 cc, No of cylinder : 3, max Power : 48 BHP @ 6000 RPM, Max Torque: 69 Nm @ 3500 RPM, Valve mechanism: SOHC.	A226	8 Nos.	
227	Annual Maintenance Contract (AMC) of the Working Condition of petrol MPFI Engine as mentioned at Sl. No. 226 for 03 years after the Warranty period as provided by the Bidder. Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc. Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)	A227	8 Nos.	
228	Surface plate : Cast iron surface plate shall conform to IS:2285-2003. It shall be made from plain grey iron castings conforming to grade FG:220 of IS : 210-1978. Material test certificates as required by the Indian standard shall be submitted along with the supply. Size :- 400 mm x 400 mm	A228	8 Nos.	
229	Pipe Stock and Die : Pipe stock & die, Size :- 1/2" to 1.5" Materials :- Body- Cast Iron, Cup-S.G. Iron/Ductile Cast Iron, Chaser- H.C.H.Cr, Screw-Harden, Wire-Spring Steel, Bolt-G-8.8, Ring Cast Iron, Handle-S.G. Iron, as per IS:554 1999/ISO 7-1 1994.	A229	32 Sets	
230	Hammering drilling machine : Length -275 mm., Weight-1.8Kg.-2.0 kg., Optimal range-1/8" to 5/16", R.P.M.-3000, Vibration level drilling-16 to15.5 mm., Max Power-820 W/230v/single phase,	A230	8 Nos.	
231	Electric PPR pipe welding machine : Welding Size 20, 25, 32, 40, 50, 63 mm, Ambient humidity-20-80 degree Cen., Voltage range Ac-180-240 Voltage, 50Hz, The heating head temperature-260 degree centigrade. Wattage - 800-900, Weight -3 - 3.6 kg. Materials:- Cast Iron (Red and gray we offer a high grade range)	A231	8 Nos.	
232	Annual Maintenance Contract (AMC) of Electric	A232	8 Nos.	

	<p>PPR pipe welding machine as mentioned at Sl. No. 231 for 03 years after the Warranty period as provided by the Bidder.</p> <p>Scope of work : AMC will cover servicing, repair / rectification, preventative maintenance & breakdown maintenance, any adjustments, etc. on all mechanical, electrical & software system (if required) arising out of normal usage of the said machines alongwith provision of spare parts, consumables, etc.</p> <p>Note: Rate is to be quoted on per year basis (Financial year is to be mentioned specifically)</p>			
233	<p>D.E. Pedestal Grinder with two wheels 175 mm rough and smooth. Heavy duty, C.I. body double ended pedestal grinder M/C duly fitted with 0.5 HP motor AC/ 220/230V.R.P.M.;- 2880 with rotary switch, a pair of grinding wheels of size 8"x1"x1/2" (one rough & one smooth) a pair of eye shield for Spark protection & a pair of C.I. brackets as tool rests, duly mounted on M.S. Fabricated pedestal stand. With diamond wheel Dresser & maintenance kit.</p>	A233	8 Nos.	
234	<p>Hydraulic pressure machine for testing leakage in GI pipe fittings etc. Type of pres-Four pillar, Down Stoke double action and PLC controlled, Capacity- 500 Ton, Table Size-2500x2500mm, Bed Size(Working Platform)-2500x2500mm, Working Height-800-1100mm, Prssure-2.5 mpa, Head-35 MTR, Material- Mild Steel.</p>	A234	8 Nos.	
235	<p>Bench drilling machine : Drilling capacity in steel :- 13mm Morse taper in spindle:- M-1 Spindle traverse :-100mm Pillar Diameter:- 57.15 mm Distance between centre of spindle and column front :-149mm Max. distance between spindle and table :-300mm Max. distance between spindle and base:-500mm Table Working surface :- 200 x 200mm (with coolant gutter) Base Working surface:-180 X 210mm Nos. of spindle speeds :- 4 Range of spindle speeds (rpm):-480 to 2080 Power of the spindle drive motor :-0.5 H.P,1425 R.P.M Accessories: Machine Lamp- 1Nos.</p>	A235	8 Nos.	
236	<p>Pipe bender(Hydraulic type) : ½"x2" M.S./S.S. pipe bending machine M.S. plate Fabricated body, 2/10 H.P. motor, Power Pack, Revs-Fwd Inching Auto Control Penal,, Hydraulic System Pipe Clamping System, With 1" pipe O.D. ,Radius 10"Die Set.</p>	A236	8 Nos.	

Sd/-
Director of Industrial Training
West Bengal