

**BILL OF MATERIAL REQUIRED FOR EACH TRAINEE FOR THE FOLLOWING
TRADES DURING THE ALL INDIA TRADE TEST OF CRAFTSMEN (ANNUAL PATTERN)
UNDER CRAFTSMAN TRAINING SCHEME TO BE HELD IN THE MONTH OF DECEMBER 2021**

421. COMPUTER OPERATOR PROGRAMMING ASSISTANT*

515. MECHANIC DIESEL

- i. 12 volt Lead acid Battery
- ii. Multi meter
- iii. Battery charger
- iv. Multi cylinder Diesel engine
- v. Light motor vehicle
- vi. Multi Scan tool
- vii. Auto electrical test bench
- viii. Injector testing set (Hand Tester)
- ix. Injector cleaning unit
- x. Battery wires with lugs & Crocodile clips
- xi. Cotton waste : As required
- xii. Waste cloth : As required
- xiii. Diesel Injector
- xiv. Diesel : As required

991. DRAUGHTSMAN CIVIL (1st YEAR)

- i. A2 size drawing sheet
- ii. A4 size sheets
- iii. Auto level with tripod
- iv. Telescopic staff
- v. Metric Chain with arrows
- vi. Ranging rods
- vii. Peg
- viii. Mallet
- ix. Tape

DRAUGHTSMAN CIVIL (2nd YEAR)

- i. Personal computer with AutoCAD software
- ii. A3Sheet
- iii. A4Sheet

442. ELECTRICIAN (1st YEAR)

- i. Cutting plier 150 mm
- ii. Screw driver 150 mm
- iii. MC Voltmeter 0-15V
- iv. MC Ammeter 0-10
- v. Hydrometer
- vi. High rate discharge tester
- vii. Battery charger for 12V
- viii. Variable resistor 10 ohms, 5A capacity
- ix. Battery 12V lead acid type
- x. Petroleum jelly : As required
- xi. Distilled water - 1 bottle (450ml) : As required
- xii. Test leads with crocodile clips - 1 pair

xiii.	Concentrated sulphuric acid	:	As required
xiv.	Cotton Waste	:	As required
xv.	Soda bi-carbonate	:	As required
xvi.	Wattmeter 500V/5A, 3 KW		
xvii.	M.I. Voltmeter 0-500 V		
xviii.	M.I. Ammeter 0-5A		
xix.	P.F Meter		
xx.	3 ϕ Load setup(3 ϕ Motor / 3 ϕ lamp Load)		
xxi.	200W, 250V lamps	:	03 Nos.
xxii.	100W, 250 lamps	:	03 Nos.
xxiii.	Connecting leads	:	As required
xxiv.	Pendent-holders 6A 250V	:	06 Nos.
xxv.	Voltmeter M.I. 0 - 250/300V	:	02 Nos.
xxvi.	Ohmmeter (0 - 500 ohms)		
xxvii.	Ammeter M.I. type (0 - 10 Amp)		
xxviii.	Ammeter M.I. 100 mA		
xxix.	Voltmeter M.C. 0-15V		
xxx.	D.C. supply 12 volts		
xxxi.	Single phase transformer 115/230 volts, 1KVA		
xxxii.	Auto-transformer (IP-240V) OP 0-270V, 5A		
xxxiii.	Knife switch DPST 16A 250V		
xxxiv.	Connecting cables	:	As required

ELECTRICIAN (2nd YEAR)

i.	Insulated combination plier 200mm		
ii.	Insulated screw driver 200mm with 4mm blade		
iii.	DE spanner set 5 mm to 20mm		
iv.	MI volt meter 0-300 V		
v.	MI volt meter 0-500 V		
vi.	Test lamp 240V, 60 Watts	:	02 Nos.
vii.	AC 3 phase squirrel cage induction motor -3HP / 5HP, 3-Phase, 415V, 50Hz		
viii.	PVC Insulated copper cable 1.5 sq mm	:	04 m.
ix.	Pendent lamp-holder 240V 6A	:	02 Nos.
x.	Oscilloscope, 20MHz, dual trace		
xi.	Voltmeter MC 0-30V		
xii.	Multimeter		
xiii.	Soldering iron 25W 240V		
xiv.	Function generator		
xv.	Lug board General purpose 5 points		
xvi.	Diode IN4007	:	4 Nos.
xvii.	Resistor 470 Ω		
xviii.	Step-down transformer, 240V 24V 500Ma or 12V 500mA		
xix.	Multi strand wire, red, blue 19/0.3 of 600V grade	:	As required
xx.	Base board -(Laminated board 30 x 15 x 3mm)		
xxi.	Nuts, bolts and washers	:	As required
xxii.	3 Pin plug 6A 250V		
xxiii.	Resin core solder 60/40	:	As required
xxiv.	Hook-up wires	:	As required
xxv.	Graph sheet		
xxvi.	Insulated cutting pliers 200mm		
xxvii.	Screwdriver 200mm		

xxviii.	Electrician's knife (100 mm)		
xxix.	M.C. ammeter 0-1A		
xxx.	M.C. voltmeter 0-300V		
xxxi.	Tachometer 300-3000 r.p.m.		
xxxii.	Megger - 500V		
xxxiii.	Test lamp		
xxxiv.	M.C. ammeter 0 to 15A		
xxxv.	DC shunt motor 220V 3HP		
xxxvi.	Rheostat 220 ohms 1 amp		
xxxvii.	3 point starter 15A 220V		
xxxviii.	P.V.C. Insulated multi-strand copper cable 2.5 sq mm		
	600V grade	:	As required
xxxix.	Fuse wire 15 Amps	:	As required
xl.	EC 1000 μ f / 63V	:	02 Nos.

446. ELECTRONIC MECHANIC (1st YEAR)

i.	Analog multimeter		
ii.	Assorted type of Diodes	:	05 Nos.
iii.	Regulated DC power supply 0-30V/2A		
iv.	Digital multimeter		
v.	CRO Dual trace 0-20 MHz		
vi.	Signal Generator		
vii.	IC 741		
viii.	Resistor 1k Ω , 1/4 W/CR25		
ix.	Diode 1N4007	:	02 Nos.
x.	Breadboard		
xi.	IC-7408	:	04 Nos.
xii.	IC-7404	:	04 Nos.
xiii.	LED 5mm Red	:	04 Nos.
xiv.	Resistor 330 Ω 1/4 W/CR25	:	04 Nos.
xv.	Miniature toggle switch SPDT	:	02 Nos.
xvi.	Hook up wires	:	As required

ELECTRONIC MECHANIC (2nd YEAR)

i.	RJ45 Crimping tool		
ii.	Network cable tester		
iii.	Personal computer	:	02 Nos.
iv.	8 port network switch		
v.	Cable stripper		
vi.	CAT6 cable	:	02 meter
vii.	RJ45 plug	:	02 Nos.
viii.	Regulated DC power supply 0-30V/2A		
ix.	Digital multimeter		
x.	Audio generator		
xi.	RF generator		
xii.	CRO dual trace 0-20MHz with probe kit		
xiii.	Soldering iron -25W/240V		
xiv.	General purpose PCB		
xv.	Transistor BF 195C or equivalent		
xvi.	Capacitor ceramic 0.01 μ F, 0.1 μ F, 0.001 μ F/25 VDC		
xvii.	Resistor 10K Ω 1/4 W/CR25	:	03 Nos.
xviii.	Resistor 21 K Ω / 20 K Ω		

xix.	Resistor 100KΩ¼ W/CR25		
xx.	Solder, flux, wires	:	As required
xxi.	Magnifier lens		
xxii.	Cleaning brush		
xxiii.	IPA cleaning solution		
xxiv.	Cell phone/ Smart phone		
xxv.	Precision screw driver set		
xxvi.	Soldering and desoldering station		
xxvii.	Digital multimeter		
xxviii.	Spare components	:	As required
xxix.	Jumper wire	:	As required

502. MECHANIC MOTOR VEHICAL (1st YEAR)

i.	Cylinder bore dial gauge complete set		
ii.	Micrometer 0.01mm		
iii.	The cylinder bore standard size		
iv.	Oil can	:	As required
v.	Cotton waste	:	As required
vi.	Banian cloth	:	As required
vii.	Engine oil	:	As required
viii.	A four cylinder engine block		
ix.	Torque wrench		
x.	Straight edge		
xi.	Feeler gauge		
xii.	Cylinder head gasket kit		
xiii.	Diesel	:	As required
xiv.	A four cylinder diesel engine		
xv.	Multimeter		
xvi.	Auto wire in different sizes	:	As required
xvii.	Wire connectors in different sizes	:	As required
xviii.	A running condition four Cylinder diesel vehicle/engine		

MECHANIC MOTOR VEHICAL (2nd YEAR)

i.	Scan tool		
ii.	Spark plug gaug		
iii.	Timing light		
iv.	Multimeter		
v.	A running condition four cylinder petrol engine		
vi.	SPARK PLUG	:	04 Nos.
vii.	Engine support stand		
viii.	Vehicle lift		
ix.	Hydraulic jack		
x.	Clutch plate aligning tool		
xi.	Engine rope	:	As required
xii.	Flywheel holder		
xiii.	Wooden mallet		

- xiv. Steel rule
- xv. Vernier caliper 300 mm in size
- xvi. Cotton waste : As required
- xvii. Banian cloth : As required
- xviii. Clutch plate
- xix. Clutch cover assembly
- xx. Release bearing
- xxi. Engine gas analyser
- xxii. EGR VALVE

503. MECHANIC REFRIGERATION & AIR - CONDITIONING TECHNICIAN (1st YEAR)

- i. Clamping hose
- ii. Flaring block and yoke
- iii. Hammer Ball peen
- iv. Measuring Tape
- v. Tube cutter-3to16mm Dia
- vi. Spanner set
- vii. Cutting plier
- viii. Nose plier
- ix. Screw Driver 250mmlength
- x. Spark lighter
- xi. Butane gas can
- xii. Spelter
- xiii. Dry Nitrogen Cylinder with pressure regulating valves
- xiv. Silver rod
- xv. Silver flux
- xvi. Static Condenser
- xvii. Static Evaporator

MECHANIC REFRIGERATION & AIR - CONDITIONING TECHNICIAN (2nd YEAR)

- i. Cleaning solution
- ii. Cleaning brush.
- iii. Cotton Waste. : As required
- iv. De scaling brush for condenser
- v. Cooling tower, water pump, clean sump

592. WIREMAN (1st YEAR)

- i. Insulated combination pliers 200mm
- ii. Double blade Knife 100mm
- iii. Long nose pliers 150mm
- iv. Electrician screw driver 200mm
- v. Connector screw driver 100mm
- vi. Wire stripper 150mm
- vii. Neon line tester 150mm, 500V
- viii. Regulated power supply (RPS) unit 0-30V, 5 A
- ix. MI voltmeter 0 – 300V
- x. MC ammeter 0 – 500mA
- xi. Digital Multi meter 4½ digit
- xii. MI ammeter 0-1A

xviii.	Three phase squirrel cage induction motor, 415V, HP with starter, belt loading arrangement and spring balances	:	01 No.
xix.	MI voltmeter 0-500V	:	01 No.
xx.	MI ammeter 0- 10 A	:	01 No.
xxi.	PVC insulated copper 1.5 Sq mm flexible wire, 650V grade	:	10 m
xxii.	ICTP switch, 500V, 16A	:	01 No.
453.	FITTER (1st YEAR)		
	i. M.S. Flat 65 x 45 x 8mm	:	02 Nos.
	FITTER (2st YEAR)		
	i. M.S. Flat 80 x 55 x 10 mm	:	02 Nos.
969.	WELDER		
	i. M.S. Flat 155 x 110 x 10mm	:	01 No.
	ii. M.S. Flat 155 x 60 x 10mm	:	02 Nos.
	iii. M.S. Flat 155 x 45 x 10 mm	:	01 No.
	iv. S.S. Flat 155 x 55 x 06 mm	:	02 Nos.
	v. GMAW Plant with accessories		
	vi. Stainless steel filler rod dia 1.2 mm		
	vii. GTAW plant with accessories (S. S filler rod& argon gas)		

Note: *All tools, Instrument and equipment as per syllabus of the trade should be kept ready in working condition.
