

Annexure - 1

Indira Gandhi National Tribal University
Department of Chemistry
Equipments List

S No.	Equipments	Quantity	Specialization
1.	Remi (R-24) Centrifuge Machine with Tube	01	Stepless speed regulator with zero start interlock Digital speed indicator Dynamic brake 0-99 minutes digital countdown timer Imbalance detector with cutoff Safety lid interlock to prevent cover opening during centrifugation Rotar heads: 6 × 25 ml; 6 × 50 ml 2 sets Centrifuge Tubes for each rotar head
2.	Centrifuge (5000RPM)	01	Bench Top Lab. Centrifuge 5000 R.P.M. - General Purpose Laboratory Centrifuge Machine Microprocessor based Heavy Duty C.R.C. Construction finished with powder coating Fitted with brushless automatic balanced motor Digital timer 0-99 minutes Digital speed indicator Digital r.c.f Indicator Programmable speed regulator.
3.	Deionizer	01	Exchange capacity* at 10°dH 500lit, Flow max. l/h 50, Can be connected directly to the water supply and is immediately ready for use, Automatic deaeration due to the water being supplied from the bottom Minimum risk of microbial contamination due to slit nozzles in the raw water supply Extremely secure and leakproof sealing of the nozzles Mounted Conductivity meter
4.	Electronic Weighing	01	Accuracy: 0.000 to 10.000 kg
5.	Fridge (Double Door)	01	240 liters
6.	Fridge (Single Door)	01	240 liters
7.	Muffle Furnace with PID Controller and accessories gloves and tong	01	Temperature Range: ambient to 1125°C (2057°F), Electrical supply: 200-240V 50/60Hz Heating Jones: L 30 cm × W 20 cm × H 20 cm Specification of PID controller: <ul style="list-style-type: none">• Accuracy: 0.25% of FSR or 2°C Max, Software Calibrated Lineariser• Resolution: TC -1°C, RTD-1°C or 0.1°C• Automatic Cold Junction compensation for TC

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			<ul style="list-style-type: none"> Setting Method: By Front Key pad Control Method: ON/OFF, Cooling with delay & Auto Tune PID (PID) (Field selectable) Control O/P: 1 C/O-Relay o/p (5A@230vac) & Isolated SSR o/p (+12vdc) Set point : Single Set point Sensor Break Protection: Relay gets OFF when sensor breaks Main Relay status: By front panel LED indication Ambient Temp.: 0°C to 55°C Humidity: 35 – 85% RH Auto tuning facility
8.	Gas Cylinder with Regulator (Ar, and N ₂)	02	01 Argon Gas cylinder with regulator 01 Nitrogen gas cylinder with regulator Specification of gas regulator: <ul style="list-style-type: none"> Double meter gauze Brass body
9.	Hot air Blower	02	General hair dryer type
10.	Heating Mental - 50 mL	02	
11.	Heating Mental - 100 mL	10	
12.	Heating Mental - 250 mL	10	
13.	Heating Mental - 500 mL	02	
14.	Heating Mental 1000 mL	01	
15.	Hot Air Oven	01	Temperature range: Ambient to at least 250°C Temperature stability: ± 2°C Housing materials: Steel sheet duly powder coated Duty cycles: Continuous Interiors: Stainless steel 304 grade heavy gauze to with stand temperature up to 350°C Insulations: High temperature, ceramic blanket Power consumption: 220/230V AC & 177; 10% 50 HZ Forced Air circulating System with Fan for temperature Uniformity Temperature controller by Microprocessor based Auto Tune PID controller with 0.01 resolution & PT 100 as sensor. Electronic Digital Timer Capacity: 24" × 24" × 36"
16.	Magnetic Beads Different Sizes	10	-
17.	Magnetic Stirrer with Hot Plate	10	Digital Magnetic Stirrer with Hot Plate: Compact stirring device utilizing a rotating magnetic field by a permanent magnet including variable stirring action from the speed from 100- 1400 rpm with speed accuracy of ±2. Magnetic

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			field applied from below the container. Stirring is accomplished by a Teflon rotor placed in the liquid to be stirred. Stainless steel top plate bearing medium temp max. 250° C with an accuracy temp setting of ±5°C control Digital temperature controller with an accuracy setting of ±5°C with the facility of Safety circuit hot plate 25°C above
18.	Melting Point Apparatus	04	To check the MP of organic samples by using thermometer up to temperature 350 °C
19.	Mortar and Pastel	10	Stone Made in small and medium size
20.	Thermometer up to 360°C	10	Temperature range : 0 to 360 °C With 1 °C accuracy
21.	Vacuum Pump for suction Filtration and drying for compound	01	High Vacuum Pump Displacement capacity (lit/min) : ≥ 250 Cubic Meter/hr: 15 Ultimate Vacuum when measured on a Mcleod gauge With gas ballast closed (m.bar) is better than: 1×10^{-3} With gas ballast opened (m.bar): 1×10^{-3} Inlet connection (QF-25) is equivalent to (KF-25) KF-25 Oil Charge: < 2.5 Lt. Motor HP: ½ Normal rotation speed RPM: >1400 And all the accessory for filtration of organic compound synthesis like Buchner funnel, and joint sectional flask and rubber cork and rubber cutter
22.	Vacuum Pump with accessory for Gravimetric Analysis	01	Specification of Vacuum Pump Capacity: 1.8 m ³ /h Number of steps (heads): 2 (2) Final vacuum (absolute): <10 mbar Final vacuum (with gas ballast): 24 mbar Power Consumption: 210 W Electrical requirements: 100-240 V / 50-60Hz Pump Motor: DC/brushless Nominal speed: max. 1600 min ⁻¹ Sound Level: 40-52db (A) And all the accessory for filtration in sintered glass filtering crucible (G1, G2, G3, etc) in gravimetric analysis
23.	Oil Bath with Coil and Dimmerstat	04	Specification of dimmerstat: Input: 240 V, 50/60 Hz Output: 0-270 V Max Load 8 Amp Max kV: 2.16
24.	Oil Bath with PID Controller Box and thermocouple	03	PID controller should have following specification <ul style="list-style-type: none"> I/P Sensor (Selectable): J, K, R, S Thermocouple/RTD Accuracy: 0.25% of FSR or 2°C Max, Software Calibrated Lineariser Resolution: TC -1°C, RTD-1°C or 0.1°C Automatic Cold Junction compensation for TC

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