

OFFICE OF THE PRINCIPAL, KANPUR ANCHALIKA(DEGREE) MAHAVIDYALAYA,KANPUR

NOTICE NO: 18 //Date: 05/06/2019

QUOTATION CALL NOTICE

Sealed quotations are invited from registered firms /agencies having valid Registration Certificate from the competent authorities, GST Registration Copy , PAN Card copy, Authorization certificate from Manufacturer in case of Dealer for supply of Laboratory equipments , Laboratory furniture and chemicals in separate envelopes to the Principal , kanpur Anchalika(degree) Mahavidyalaya,kanpur. The suppliers have to provide the soft copy details of specification & price in the form of CD or Pen drive .The details of the specification are available with the Head of the department of physics as well as in college website www.kamahavidyalaya.in Last Date of submission of Quotations Date:13.06.2019 By: 5.00 P.M.

The Intending Firms should submit their quotations through Registered post /Courier service to reach the office of the undersigned with name of the department "DEPARTMENT OF _____" should be super scribed on the cover, Should reach the office of the Principal , kanpur Anchalika(degree) Mahavidyalaya,kanpur on or before Date: 13.06.2019 By 5.00 P.M positively.

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2. Authorization certificate from Manufacturer in case of Dealer.
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5. Rate quoted should be exclusive of GST (GST to be mentioned separately).
6. Quotation should be sent to the principal, Principal , kanpur Anchalika(degree) Mahavidyalaya,kanpur by Registered post /Courier service latest by date: _____ by time: _____ positively.
7. The firm must have ISO Certified Company and produce last 3 Years Audited Statement,
8. Specify Brand name and full model name for each item is must, without technical specification quotation could Not be considered for technical evaluation.
9. Inclusion of the Complete printed Company catalogue is mandatory, each item, equipment should be complete in itself without needing any extra requirements.
10. The selection for procurement of equipments will be based on quality and past performance along with cost. In this context decision of technical committee is final based on documentary evidence or actual physical Verification.
11. The approved firm will supply the items within fifteen days from the date of issue of the purchase order.
12. The product/Items should be delivered in the college premises. Specification of the item shall be inspected by The college authorities for complete finish of the work/delivery the product.
13. Without authentic documents the quotation will be rejected by the principal.
14. Payment will be made (after successful placement/installation of equipment/laboratory) in shape of A/C Payee Cheque.
15. The authority of the college reserves the right to accept/cancel/reject any /all the quotations without assigning any reason thereof.

Memo No. 18(a) Dt. 05/06/2019

kanpur Anchalika(degree) Mahavidyalaya,kanpur
Aspanda
Principal
05/06/19 for PRINCIPAL
Kanpur Anchalika

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Aspanda
Principal
kanpur Anchalika(degree) Mahavidyalaya,kanpur
PRINCIPAL
05/06/19 for
Kanpur Anchalika
Mahavidyalaya, Kanpur

LIST OF REQUIREMENTS FOR DEPARTMENT OF PHYSICS

MECHANICS LAB

SL NO	NAME OF THE EXPERIMENT WITH SPECIFICATION	Make
1	<p>Measurements of length (or diameter) using Vernier caliper, screw gauge and travelling microscope. <u>Technical Specification:</u> Travelling Microscope-Travel : Horizontal Travel 170mm, Vertical Travel 110mm, Least count : 0.01mm, Working Distance : 50mm, Eyepiece Ramsden : 8x, Reticle : 90° Cross on glass Vernier Caliper-Material: Stainless steel, Jaw Depth: 16 mm, Range: 0-150 mm, Least Count: 0.01 mm Screw Gauge-Material : Stainless Steel, Range: 0-25 mm, Finish: Metallic</p>	INDOSAW LEYBOLD PHYWE
2	<p>To determine the Height of a Building using a Sextant with its Stand <u>Technical Specification</u> Graduated : -5° to 125° into 1° on the arc, Micrometer : Divided to 1 minute on black drum Index Mirror: Rectangular, 33x49mm aluminum spattered, Horizon mirror : Circular, 50mm diameter, one half transparent, other half aluminum separated, Shade glasses: Three different densities for direct rays and four reflected rays. Star Telescope: Galilean monacle 4x40 mm Illuminator: Equipped, Adjusting tools: 1-wrench for mirror, Spare parts: 2-dry cell, 2 bulbs, Case: Hard wood, Weight of sextant: 1.9kg/Stand: (m.s) 6 feet stand Tripod Stand Weight of case: 2kg, Telescope: Terrestrial</p>	INDOSAW LEYBOLD PHYWE
3	<p>To determine the Moment of Inertia of a Flywheel. <u>Technical Specification</u> Flywheel consists of a steel disc 250 mm old x 30 mm wide. This is integral with a shaft running in ball bearings. The periphery f the disc is an engraved mark which passes a pointer as the flywheel revolves. The bracket carrying the flywheel should be bolted to a vertical surface Sufficient free fall to drive the flywheel for up to 10 revolutions. Weights: (9*100gm slotted weights), Meter Scale 1meter & Digital Stop watch</p>	INDOSAW LEYBOLD PHYWE
4	<p>To determine the Young's Modulus of a Wire by Optical Lever Method <u>Technical Specification</u> Brass Rod: 1 meter, G clamps with sharp knife, 2 sets of mirror and holder Slotted weight: (4*500g=2kg), Cylindrical base with telescope.</p>	INDOSAW LEYBOLD PHYWE
5	<p>To determine the Modulus of Rigidity of a Wire by Maxwell's needle. <u>Technical Specification</u> Hollow cylindrical brass tube of length 40cm, Maxwell's needle, Wall Bracket, Wire Screw gauge : Range: 0-25 mm, Finish: Metallic, Meter scale-1meter, Digital Weighing balance Digital Stopwatch</p>	INDOSAW LEYBOLD PHYWE
6	<p>To determine the Elastic Constants of a Wire by Searle's method. <u>Technical Specification</u> SS rectangular bars each of length 30cm-2 nos, Vernier caliper, Material: Stainless steel, Jaw Depth: 16 mm, Range: 0-150 mm, Least Count: 0.01 mm, Screw gauge, Material : Stainless Steel, Range: 0-25 mm, Stand For Searle's App</p>	INDOSAW LEYBOLD PHYWE
7	<p>To determine g by Bar Pendulum. <u>Technical Specification</u> Brass Bar : 100 x 3.75 x 0.5 cm³ ,(Drilled with 19 holes at equal distances of 5 cm) Wall bracket : 1no, Meter scale : 100cm</p>	INDOSAW LEYBOLD PHYWE
8	<p>To determine g by Kater's Pendulum <u>Technical Specification</u> Steel rod : 100 cm in length, 1.2 cm diameter, SS adjustable masses : 600g & 300g (each) Meter scale : length 1m, Stopwatch : 1no , Removable sharp knife edges-2nos, Adjustable wooden light masses-2nos, Wall bracket-1no</p>	INDOSAW LEYBOLD PHYWE
9	<p>To Study the Motion of a Spring and calculate (a) Spring Constant, <u>Technical Specification</u></p>	INDOSAW LEYBOLD

	Adjustable scale on a stand of 37.5cm, Helical spring with pointer, Hanger 20g, Stopwatch	PHYWE
10	To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method) <u>Technical Specification</u> Constant water level reservoir can be adjusted on MS chrome plated rod on tripod stand Rubber tube of length 1mtr., Stopwatch, Thermometer, Pinch cock, Graduated cylinder 100ml Manometer on wooden stand, Glass capillary tube of length 38cm on stand	INDOSAW LEYBOLD PHYWE
11	To determine g and velocity for a freely falling body using Digital Timing Technique. & Measurement of 'g' <u>Technical Specification</u> g by free fall apparatus, Digital Timer, Photo gate sensors, Lead black and red each 100cm 2L-picket, Steel Balls, Solenoid Driver, Electromagnet, USB lead, Adaptor 5V/1A & 9V/1A Allen Key, Photo gate rod, R J cables	INDOSAW LEYBOLD PHYWE
12	Young's Modulus by Single Cantilever. <u>Technical Specification</u> MS Metal Strip L= 1m, B= 2.5cm, T=3mm, G-Clamp, Hanger 50g + 4 X 50g slotted weights Stop watch, Meter scale	INDOSAW LEYBOLD PHYWE
13	Young's Modulus by Double Cantilever. <u>Technical Specification</u> Steel strip L=1m, B= 2.5cm, T= 5mm., Knife edges acting as G-Clamp (MS), Stirrup with hook Hanger 500g+9x500g slotted weight of MS, Vernier Calliper, Screw Gauge, Bulb holder on plastic base with bulb, Cell holder with cell 1.5 V, Red lead of 50cm, Black lead of 50cm Connecting leads Banana with U clips	INDOSAW LEYBOLD PHYWE
14	To Study the laws of transverse vibration of strings by Sonometer <u>Technical Specification</u> Wooden Sonometer 110 x 10 x 8.5cm ³ , Hanger 500g + 6 X 500g slotted weights, Rubber Pad, Screw Gauge, Tuning forks (512,480,440Hz) with hammer, Weighing balance(not supplied)	INDOSAW LEYBOLD PHYWE
15	To determine Rigidity Modulus by Static method <u>Technical Specification</u> Barton apparatus, Hanger 0.5kg+6x500gm slotted iron weights, Screw gauge, Meter scale	INDOSAW LEYBOLD PHYWE

ELECTRICITY, MAGNETISM & EMT LAB

SL NO	NAME OF THE EXPERIMENT WITH SPECIFICATION	Make
1	To use a Multimeter for measuring (a) Resistances, (b) AC and DC Voltages, (c) DC Current, and (d) checking electrical fuses. <u>Technical Specification</u> Display : 3 ¾ Big LCD Display, DCV : 6V to 600V, ACV : 600mV to 600V Resistance : 400 Ω to 40MΩ, Capacitance : 50nF to 100μF , Frequency : 50 Hz to 100Khz Temperature : 0°C to 400 °C, Continuity Test , Auto Power Off	INDOSAW LEYBOLD PHYWE
2	To compare capacitances using De'Sauty's bridge. <u>Technical Specification</u> On Board Decade Resistance: Range :10 ,100 & 1KΩ.-2nos, Standard Capacitors : 0.1 μf & 0.2 μf Unknown Capacitors :4nos , A.C supply of frequency : 10 KHz, Null Detector : Digital Components are mounted on board, Front panel built with high class insulated sheet Circuit & Symbol diagram printed on front panel, Interconnection : 4mm banana patch cord Mains Power :230V/50Hz	INDOSAW LEYBOLD PHYWE

3	Measurement of field strength B and its variation in a Solenoid (Determine dB/dx)	INDOSAW LEYBOLD
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	<p><u>Technical Specification</u> POWER SUPPLY 0-16V, 5A Voltage : 0-16V DC continuously variable & stabilized, Voltage display : 3½ digit LED, Ripple : Less than 25mV, Current : 5 A continuously variable, 10% to full rating, Current display : 3½ digit LED GAUSS METER WITH AXIAL PROBE Range : 200 Gauss & 2 k Gauss, Resolution : 0.1Gauss at 0 - 200 Gauss, Axial Hall Probe : InAs, Display : 3½ Digit LED INDUCTION COIL SETS Material : Copper OD(mm) L (mm) N R (Ω) L (mH) I max 40 75 165 0.7 0.5 2A 40 100 220 1 0.71 2A 40 125 275 1.2 0.91 2A 32 75 165 0.6 0.36 2A 32 100 210 0.8 0.51 2A 32 125 275 1 0.66 2A</p>	PHYWE
4	<p>To Study the Characteristics of a Series RC Circuit. <u>Technical Specification</u> Built in DC Regulated Power Supply :0-12V (Variable), Voltmeter : 0-12V (Moving Coil) Galvanometer : 1-0-1 (Moving Coil), Resistances :10KΩ,15KΩ & 18KΩ, Capacitors : 1000 µf,2200 µf & 4700 µf, Toggle Switch : 2way, Dump Switch : 1no</p>	INDOSAW LEYBOLD PHYWE
5	<p>To study a Series LCR circuit and determine its (a) Resonant frequency, (b) Quality factor (C)Band width (d)Impedance at resonance <u>Technical Specification</u> DC Voltmeter : 0-5V (Moving Coil),DC Ammeter : 0-25mA (Moving Coil) Resistances :100Ω,150Ω & 220Ω, Capacitors : 0.1µf,0.2µf &0.3µf, Inductance : 50mH</p>	INDOSAW LEYBOLD PHYWE
6	<p>To study a Parallel LCR circuit LCR circuit and determine its (a) Resonant frequency, (b) Quality factor (c) Antiresonant frequency <u>Technical Specification</u> DC Voltmeter : 0-5V (Moving Coil), DC Ammeter : 0-25mA (Moving Coil) Resistances :100Ω,150Ω & 220Ω, Capacitors : 0.1µf,0.2µf &0.3µf,Inductance : 50mH</p>	INDOSAW LEYBOLD PHYWE
7	<p>To Determine a Low Resistance by Carey Foster's Bridge <u>Technical Specification</u> DC Supply : 1.5V/250mA (Switch Controlled), Decade Resistance Box : 0.1Ω to 10Ω-2nos (Fractional), Galvanometer: 30-0-30µA (Moving Coil), DC Regulated Fixed Power Supply : 1.5V/250mA , Fixed Resistors :10Ω±1% -2nos, Carry Foster Bridge with jockey, Circuit & Symbol diagram printed on front panel</p>	INDOSAW LEYBOLD PHYWE
8	<p>To Verify the Thevenin and Norton Theorems <u>Technical Specification</u> DC Supply:12V/150mA (Variable), Resistor : 500Ω/1W (Variable), Resistor : 500Ω,200Ω & 1KΩ (Fixed), DC Voltmeter :0-12V(Moving Coil), DC Ammeter : 0-20mA(Moving Coil)</p>	INDOSAW LEYBOLD PHYWE
9	<p>To Verify the Superposition Theorems <u>Technical Specification</u> DC Regulated Power Supply :12V/150mA (Fixed) & 5v/150mA (Fixed), Resistor : 220Ω,100Ω & 150Ω (Fixed), DC Voltmeter :0-12V(Moving Coil), DC Ammeter : 0-50mA(Moving Coil)-2nos</p>	INDOSAW LEYBOLD PHYWE
10	<p>To Verify the Maximum Power Transfer Theorems <u>Technical Specification</u> DC Regulated Power Supply :12V/150mA (Fixed), Resistor : 500Ω,100Ω & 150Ω (Fixed) Resistor : 500Ω/1W (Variable), DC Voltmeter :0-12V(Moving Coil), DC Ammeter : 0-50mA(Moving Coil), Components are mounted on board</p>	INDOSAW LEYBOLD PHYWE
11	<p>To determine the Mutual inductance of two coils by Absolute method <u>Technical Specification</u> Power Supply : 12V AC/DC, Coil Turn : 300,600,1200,3600,12000, Core : U & I Section 32X25mm Quadrant shaped plane plate, Quadrant shaped slotted plate Aluminium motor disc, Vertical support rod</p>	INDOSAW LEYBOLD PHYWE
12	<p>To determine self-inductance of a coil by Anderson's bridge with Null detector</p>	INDOSAW

	<u>Technical Specification</u> Variable resistance 0-100 ohms, Resistance dials 10x10,10x100 & 10x1000 ohms Standard capacitor 0.1 μ f and 0.2 μ f, Resistance 1000ohm P and Q, Unknown inductance L Digital NULL Detector or Head phone	LEYBOLD PHYWE
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THERMAL PHYSICS & STATICAL MECHANICS LAB

SL NO	NAME OF THE EXPERIMENT WITH SPECIFICATION	Make
1	To determine mechanical equivalent of heat J by Callender and barne's constant flow method. <u>Technical Specification</u> Calendar and Barn's continuous flow calorimeter, AC Ammeter : 0- 3A (Moving Coil) AC Voltmeter : 0-10V (Moving Coil), Thermometers : 10°C to 100°C -2nos Measuring cylinder : 0 to 100mg, DC Supply : 2V to 12V/3A, Three Flow Water containg Beaker -1 no, Rubber tubing : 8mm - 2Meter, Digital Stop-watch	INDOSAW LEYBOLD PHYWE
2	Measurement of Planck's constant using LEDS & (black body) radiation <u>Technical Specification</u> Selector Switch : V-I and T-I experiment Selector Switch at V-I position :-Voltmeter & current Display: 3½ digit, 7segment, Voltage Range : 0.000-2.000V, Current Range : 0-2000mA Selector Switch at T-I position :-Current Display : 3½ digit, 7segment LED, Current Range : 0-20mA, Temperature Display : 3½ digit, 7segment LED, Temperature Range : Room temperature to 60.0°C, Oven , Oven Connector : 5 Pin, DIN type, LED Connector : 3 Pin, DIN type Oven with Temperature Sensor:- Heating Element : 20 ohm, Oven Connector : 5 Pin, DIN Ambient Temp. : 60° C, Temp. Sensor : Pt100, Output Pin : Heater pin 4 & 5.,Temperature pin 1 & 2	INDOSAW LEYBOLD PHYWE
3	To verify the Stefan`s law of radiation and to determine Stefan's constant. <u>Technical Specification</u> Stefan's Constant radiation Apparatus on stand with black & silver disc Cu-Cn-Cu thermocouple on a rigid insulated board with two junctions in cotton wool. Oil bath with mustard oil, capacity 100 ml., Fuel for spirit lamp 2 x 100 ml. Spirit lamp on adjustable stand. Cotton wool in a cylindrical copper enclosure on the stand for junctions of cu-cn thermocouple. water bath copper Super sensitive micrometer as galvanometer fixed on board. Steam boiler2 liter. Capacity with plastic tubing with pinch cock. Hot plate thermostatic controlled single phase (8"). Two mercury thermometer 110 ' C for black body appt. One mercury thermometer 360 ' C for oil both. One 250 ml glass beaker , one plastic funnel. Two spiral connecting wires with connectors.	INDOSAW LEYBOLD PHYWE
4	To determine the coefficient of thermal conductivity of Cu by Searle's Apparatus. <u>Technical Specification</u> Searle's Apparatus, Constant water lever bath, Measuring Beaker 600ml, Stop Watch Steam generator, Thermometers, Pinch cock, Silicon tube, Digital weighing balance	INDOSAW LEYBOLD PHYWE
5	To determine the coefficient of thermal conductivity of Cu by Angstrom's method (By Digital Sensor) And Determination of J by Calorimeter <u>Technical Specification</u> POWER SUPPLY 0-30V, 20A DC Input Voltage : 220V, \pm 5%, 50Hz AC, Output Voltage : 0-30V Voltage Resolution : 0.1V, Voltage Display : 2½ Digit LED Output Current : 0-20 Amp, Current Resolution : 0.1 Amp Current Display : 2½ Digit LED CONDUCTIVITY ROD Cu/ Al Dimension : 420 x25.4mm (Length x Diameter), Current Connection : 4mm socket Temperature Point : 10 Nos., equal spacing 35mm	INDOSAW LEYBOLD PHYWE

<p>Calorimeter Socket : 20 x 20mm (Length x Diameter) THREE FINGER CLAMP Material : Aluminium alloy, Rod : Aluminium, length=160mm BOSS HEAD Object type : Square & round shape, Object size : Up-to 13mm dia Object can be held both vertically and horizontally. LABORATORY JACK Material : Aluminium, Top Plate Size : 160x130mm Static Loading : 10kg, Vertical Elevation : 65 to 260mm</p>	
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WAVE & OPTICS LAB

SL NO	NAME OF THE EXPERIMENT WITH SPECIFICATION	Make
1	<p>To investigate the motion of coupled oscillators <u>Technical Specification</u> Support Base :-Dimension : 250x160mm (LxW), Material :Mild steel Support Rod:-000x12.5mm (LxΦ), Material :Mild steel Pendulum Rod & Weight: Material : Mild steel, Rod dimension : 750 x 12mm(L x dia.) Thread : M10, Hole position : From top at 25mm, 125mm, 175mm,225mm, 375mm & 725mm Weight dimension: : 50 x 50.8mm (Lx dia.) Support Beam:-Material : Mild steel, Dimension : 542.6x19.2x19.2 mm (L x W x thickness) Support Rod : 2 Nos, 12.7mm diameter, M6, Beam Hole : 4.2mm diameter Hole position : Both side from centre at 100, 125,150mm Spring:-Material : Stainless steel, Length : 150mm, Diameter : 25mm, Type : Double Hook</p>	INDOSAW LEYBOLD PHYWE
2	<p>To determine the Frequency of an Electrically Maintained Tuning Fork by Melde's Experiment and to verify $\lambda^2 - T$ Law. <u>Technical Specification</u> Heavy steel fork , Heavy cast iron base , Electromagnet , Weight box 1, Voltage source 1.5V - 12V / 3A , Pulley with clamp , Reel of thread , Meter scale of length 1m Scale pan</p>	INDOSAW LEYBOLD PHYWE
3	<p>To study Lissajous Figures <u>Technical Specification</u> Function Generator-2nos, Function: Sine ,Square, Triangle, Frequency range :0.1Hz to 100KHz Amplitude :20Vpp, Frequency Multiplier :.1 to 10K in decade step, Opamp-IC 741 Digital Oscilloscope</p>	INDOSAW LEYBOLD PHYWE
4	<p>Familiarization with Schuster's focusing determination of angle of prism <u>Technical Specification</u> Spectrometer Scale: Brass, Dia :150mm, L.C :30 Second, Objective : Achromatic lens, f : 178mm Aperture :32mm , Slit : Brass with micrometer, Reticle : 90 cross etched on glass Eyepiece : 10X,Gauss eyepiece, in-built magnifier, Base : 190mm Triangular, Cast Iron Prism Size : 38x38x38mm,Height : 38mm, Material : EDF Sodium Vapour Lamp 35W , Transformer with Metal Box, Lamp House : 300x85mm(LxΦ), Aperture dia :25mm Mercury Vapour lamp : 80/125W Transformer with metal Box</p>	INDOSAW LEYBOLD PHYWE
5	<p>To determine the Refractive Index of the Material of a Prism using Sodium Light <u>Technical Specification</u> Spectrometer Scale: Brass, Dia :150mm, L.C :30 Second, Objective : Achromatic lens, f : 178mm Aperture :32mm , Slit : Brass with micrometer, Reticle : 90 cross etched on glass Eyepiece : 10X,Gauss eyepiece, in-built magnifier, Base : 190mm Triangular, Cast Iron Prism Size : 38x38x38mm,Height : 38mm, Material : EDF Sodium Vapour Lamp 35W , Transformer with Metal Box, Lamp House : 300x85mm(LxΦ), Aperture dia :25mm</p>	INDOSAW LEYBOLD PHYWE
6	<p>To determine Dispersive Power of the material of a prism <u>Technical Specification</u></p>	INDOSAW LEYBOLD

	<p>Spectrometer Scale: Brass, Dia :150mm, L.C :30 Second, Objective : Achromatic lens, f : 178mm Aperture :32mm , Slit : Brass with micrometer, Reticle : 90 cross etched on glass Eyepiece : 10X,Gauss eyepiece, in-built magnifier, Base : 190mm Triangular, Cast Iron</p> <p>Prism Size : 38x38x38mm,Height : 38mm, Material : EDF Sodium Vapour Lamp 35W , Transformer with Metal Box, Lamp House : 300x85mm(LxΦ), Aperture dia :25mm</p>	PHYWE
7	<p>To determine Cauchy Constant <u>Technical Specification</u> Spectrometer Scale: Brass, Dia :150mm, L.C :30 Second, Objective : Achromatic lens, f : 178mm Aperture :32mm , Slit : Brass with micrometer, Reticle : 90 cross etched on glass Eyepiece : 10X,Gauss eyepiece, in-built magnifier, Base : 190mm Triangular, Cast Iron</p> <p>Prism Size : 38x38x38mm,Height : 38mm, Material : EDF Mercury Vapour lamp : 80/125W Transformer with metal Box</p>	INDOSAW LEYBOLD PHYWE
8	<p>To determine the Resolving Power of a Prism Spectrometer Scale: Brass, Dia :150mm, L.C :30 Second, Objective : Achromatic lens, f : 178mm Aperture :32mm , Slit : Brass with micrometer, Reticle : 90 cross etched on glass Eyepiece : 10X,Gauss eyepiece, in-built magnifier, Base : 190mm Triangular, Cast Iron</p> <p>Prism Size : 38x38x38mm,Height : 38mm, Material : EDF Mercury Vapour lamp : 80/125W Transformer with metal Box</p>	INDOSAW LEYBOLD PHYWE
9	<p>To determine wavelength of (1) Sodium and (2) Spectral lines of the Mercury light using plane diffraction Grating Spectrometer Scale: Brass, Dia :150mm, L.C :30 Second, Objective : Achromatic lens, f : 178mm Aperture :32mm , Slit : Brass with micrometer, Reticle : 90 cross etched on glass Eyepiece : 10X,Gauss eyepiece, in-built magnifier, Base : 190mm Triangular, Cast Iron</p> <p>Prism Size : 38x38x38mm,Height : 38mm, Material : EDF Mercury Vapour lamp : 80/125W Transformer with metal Box</p>	INDOSAW LEYBOLD PHYWE
10	<p>To determine the Resolving Power of a Plane Diffraction Grating Spectrometer Scale: Brass, Dia :150mm, L.C :30 Second, Objective : Achromatic lens, f : 178mm Aperture :32mm , Slit : Brass with micrometer, Reticle : 90 cross etched on glass Eyepiece : 10X,Gauss eyepiece, in-built magnifier, Base : 190mm Triangular, Cast Iron</p> <p>Prism Size : 38x38x38mm,Height : 38mm, Material : EDF Mercury Vapour lamp : 80/125W Transformer with metal Box</p>	INDOSAW LEYBOLD PHYWE
11	<p>To determine the Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method). <u>Technical Specification</u> Constant water level reservoir can be adjusted on MS chrome plated rod on tripod stand Rubber tube of length 1mtr., Thermometer ,Pinch cock , Graduated cylinder 100ml Manometer on wooden stand , Glass capillary tube of length 38cm on stand Travelling Microscope: Travel : Horizontal Travel 170mm,Vertical Travel 110mm,Least count : 0.01mm,Working Distance : 50mm,Eyepiece Ramsden : 8x,Reticle : 90° Cross on glass</p>	INDOSAW LEYBOLD PHYWE
12	<p>To determine wavelength of sodium light using Fresnel Biprism. <u>Technical Specification</u> OPTICAL BENCH:-Material : Aluminium alloy, Type : Hexagonal section, Scale: 0-150cm, Least count: 1mm, Supplied with 3 fixed saddles. SODIUM LIGHT SOURCE:- Sodium Light Lamp 35W, Transformer with metal Box, Lamp house : 300x85mm(LxΦ), Aperture dia : 25mm ADJUSTABLE SLIT SELF CENTERING:- Slit width : 0-2mm, Height : 6mm, Frame : 120mm</p>	INDOSAW LEYBOLD PHYWE

	<p>dia. to avoid scattering of light of light, Rod:10mm dia</p> <p>MICROMETER EYEPICE:- Eyepiece :10X , Pitch :0.5mm, Least : 0.01mm , Displacement : 20mm</p> <p>CONVEX LENS IN HOLDER:- F.L : 200mm, Lens : 50mm dia, Frame : 130mm dia to avoid scattering of light, Rod : 10mm dia</p> <p>FRESNEL'S BIPRISIM</p> <p>Material : Glass, Size : 40x30mm(LxW), Prism Angle :178° Approx</p> <p>FRESNEL'S MIRROR:- Size:100 x 50 mm, Mirror:50 x 45 mm(L x W), Flatness:N6, Coating : Front coated, Mirror angle: 3° approx., Mounting rod:10mm</p> <p>UNIVERSAL LENS HOLDER:- Object: Upto 60mm, Jaws: 3 no at 90°, Frame: 100 mm dia Rod:10 mm dia, Rotation: By knurled screw</p> <p>MICROSCOPE OBJECTIVE IN HOLDER:- Objective:10 X, Rod diameter: 10mm, Holder diameter: 25mm</p> <p>CYLINDRICAL BASE:- Material: Ferrous, Mount: Rod 10-14 mm dia, Flat object upto 10mm Groove: Slide object 30 x 10 mm (L x W)</p>	
13	<p>To determine wavelength of sodium light using Newton's Rings</p> <p><u>Technical Specification</u></p> <p>BRIDGE TYPE MICROSCOPE:- Eyepiece : Ramsden 10x , Objective : 3x, Scale length : 110 mm Least count : 0.01 mm</p> <p>NEWTON'S RINGS REFLECTOR:- Housing : PVC, Finish : Matt black painted, Glass plate : Mounted at 45°</p> <p>SPHEROMETER (DISC BRASS):-Types : 3 legs, Vertical scale : 6mmx6mm (WxT) Micrometer : Dia. 40mm, Brass, Lower disc : Dia. 60mm, Range : 10-0-10 mm , Least count : 0.01mm</p> <p>PLANO CONVEX LENS:-Dia. : 61.5mm, Glass, Focal Length : 200mm</p> <p>SODIUM LIGHT SOURCE:-Sodium Light Lamp 35W, Transformer with metal Box Lamp house : 300x85mm(LxΦ), Aperture dia : 25mm</p>	INDOSAW LEYBOLD PHYWE
14	<p>To determine the thickness of a thin paper by measuring the width of the interface fringes produced by a wedge shaped film.</p> <p><u>Technical Specification</u></p> <p>BRIDGE TYPE MICROSCOPE:- Eyepiece : Ramsden 10x , Objective : 3x, Scale length : 110 mm Least count : 0.01 mm</p> <p>NEWTON'S RINGS REFLECTOR:- Housing : PVC, Finish : Matt black painted, Glass plate : Mounted at 45°</p> <p>SPHEROMETER (DISC BRASS):-Types : 3 legs, Vertical scale : 6mmx6mm (WxT) Micrometer : Dia. 40mm, Brass, Lower disc : Dia. 60mm, Range : 10-0-10 mm , Least count : 0.01mm</p> <p>PLANO CONVEX LENS:-Dia. : 61.5mm, Glass, Focal Length : 200mm</p> <p>SODIUM LIGHT SOURCE:-Sodium Light Lamp 35W, Transformer with metal Box Lamp house : 300x85mm(LxΦ), Aperture dia : 25mm</p>	INDOSAW LEYBOLD PHYWE
15	<p>To determine the wavelength of sodium source using Michelson's interferometer</p> <p><u>Technical Specification</u></p> <p>MICHELSON INTERFEROMETER</p> <p>Base dimension: 290x212x168mm (LxWxH), Distance (M2 & BS) : 100mm.</p> <p>Beam splitter : 50 x 38 x7mm(LxWxT), Compensating plate : 50 x 38 x 7mm(LxWxT)</p> <p>Mirrors M1 and M2 : 30 mm dia, thickness 10mm., R:T : 50 : 50</p> <p>Flatness of Beam splitter : $\lambda/8$, Least count : 0.01mm (coarse adjustment knob)</p> <p>Least count : 0.0001mm (fine adjustment knob)</p> <p>SODIUM LIGHT SOURCE</p> <p>Mount horizontally and vertically. Metal housing. Electrical safety tested.</p> <p>Starting Voltage : 470 Volts, Input Voltage : 220V, 50 Hz, Lamp House : 300x85mm</p> <p>Aperture dia. : 25mm Complete with housing for sodium vapor lamp, Transformer, Base, Mounting rod, Boss head and Sodium Bulb.</p> <p>MICROSCOPE OBJECTIVE IN HOLDER:-Objective : 10X, Rod diameter : 10mm, Holder diameter : 25mm</p> <p>OBJECT SCREEN:-Material : Translucent, acrylic., Size : 300 x 300mm, Rod : 10 mm diameter</p> <p>CYLINDRICAL BASE:-Material : Ferrous, Mount : Rod 10-14mm dia : Flat object up to 10mm Groove : Slide object,30x10mm (LxW)</p>	INDOSAW LEYBOLD PHYWE

16	<p>To determine the wavelength of Laser light using Diffraction of Single Slit & Double Slit.</p> <p>Technical Specification</p> <p>OPTICAL BENCH:-Material : Aluminium alloy, Type : Hexagonal section, Scale : 0-100cm , Least count : 1mm</p> <p>DIODE LASER:-Peak wavelength : 635nm, Operating voltage : 5V DC , Operating current : 250Ma, Optical power : 0.4-0.8mW, Laser product : Class II, Operating temp. : 0 - 40°C Storage temp. : -10 to 50°C</p> <p>PIN HOLE PHOTO DETECTOR:-Detector : Silicon photocell, Terminals : 4mm safety socket, Aperture : 1 mm, Rod : 10 mm diameter</p> <p>SLIT HOLDER:-Clear Aperture : 45x45mm, Object holder : Clip type, Mounting Rod : 10mm diameter</p> <p>SADDLE WITH MICROMETER:-Material : Aluminium, Transverse Motion : 10-0-10mm, Least count : 0.02mm, Locking : Spring loaded, Motion : X-Y axis, Holder : 10mm dia.</p> <p>SINGLE WIRE:- Frame size : 50mm x 50mm, Clear aperture : 15 mm dia. (approx.) , Wire thickness : 0.5mm (approx.)</p> <p>CROSS WIRE:-Frame size : 50mm x 50mm, Clear aperture : 15 mm dia. (approx.), Wire thickness : 0.5mm (approx.)</p> <p>TRANSVERSE SADDLE:-Material : Aluminium, Locking : Spring loaded, Motion : X-Y axis, Holder : 10mm dia.</p> <p>DIFFRACTION SLIDE:-Frame Size : 50mm x 50mm, Slit : Width=0.06mm & Separation=0.20mm (Single, Double), Diffraction grating : 80 lines / mm, Diffraction grating : 300 lines / mm, Single slit : Tapered, Double slit : Tapered, Metal gauze : 300 mesh</p> <p>All individually mounted in slide frames and protected by two glass plates.</p>	INDOSAW LEYBOLD PHYWE
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DIGITAL SYSTEMS & APPLICATION LAB

SL NO	NAME OF THE EXPERIMENT WITH SPECIFICATION	Make
1	<p>To design a switch (NOT gate) using a transistor.</p> <p>Technical Specification</p> <p>Data Switch : 0-5V-2nos, LED Indication : LED (RED)-2nos, Transistor : BC547 Resistor : 10K-2nos, DC Supply :5V, Front panel built with high class insulated sheet Circuit & Symbol diagram printed on front panel, Interconnection :2mm Mains Power :230V/50Hz</p>	INDOSAW LEYBOLD PHYWE
2 3 4 5 6 7 8 9 10 11	<p>To verify and design AND, OR, NOT and XOR gates using NAND gates</p> <p>To design a combinational logic system for a specified Truth Table.</p> <p>To convert a Boolean expression into logic circuit</p> <p>To minimize a given logic circuit.</p> <p>Half Adder, Full Adder and 4-bit binary Adder</p> <p>Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C</p> <p>To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates</p> <p>To build JK Master-slave flip-flop using Flip-Flop ICs</p> <p>To build a 4-bit Counter using D-type/JK Flip-Flop ICs and study timing diagram.</p> <p>To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip-Flop ICs.</p> <p>Technical Specification</p> <p>Basic logic gate Ic's, NOT (7404), OR (7432), AND (7408), NOR (7402), NAND (7400), EX - OR (7486). Universal gates NAND and NOR., Basic Flip-Flops RS (using NOR), JK (7476), D (7474), MS-JK (7476), D (7474), and T (using JK)., Binary counter synchronous (74191), Ripple counter (7490), Four Bit ring counter using (7476), Decade/BCD counter using (7490) Universal shift register (74194), Nine Bit parity generator/checker (74280) Multiplexer (74153) & De-multiplexer (74138), BCD to seven segment decoder (7447) Four Bit comparator (7485), 20 Pin ZIF socket, Power supply +5V, GND Binary to Gray, Gray to binary, Binary to BCD, BCD to Binary, BCD to Excess 3, Excess 3 to BCD.</p>	INDOSAW LEYBOLD PHYWE

	De-Morgan's theorem I & II, Boolean equation. To provide logic 0 & 1 inputs with LED indication 16 switches are provided. To observe the output logic states 16 LED's are provided. Preset and clear signals for Flip-Flops, counter etc., Manual clock for Flip-Flops, counter etc.	
12	To design an astable multivibrator of given specifications using 555 Timer <u>Technical Specification</u> DC Supply : 5V, IC : NE555, Led Indicator : 2nos Resistor : 100K Ω -2nos,10K Ω -2nos,1K Ω Capacitor :1 μ F,0.1 μ F-2nos,0.01 μ F-2nos,10 μ F Variable Resistor : 5K Ω	INDOSAW LEYBOLD PHYWE
13	To design a monostable multivibrator of given specifications using 555 Timer <u>Technical Specification</u> DC Supply : 5V, IC : NE555, Led Indicator : 2nos Resistor : 100K Ω -2nos,10K Ω -2nos,1K Ω Capacitor :1 μ F,0.1 μ F-2nos,0.01 μ F-2nos,10 μ F Variable Resistor : 5K Ω	INDOSAW LEYBOLD PHYWE

ELEMENTS OF MODERN PHYSICS LAB

SL NO	NAME OF THE EXPERIMENT WITH SPECIFICATION	Make
1	Measurement of Planck's constant using (black body) radiation <u>Technical Specification</u> Selector Switch : V-I and T-I experiment Selector Switch at V-I position :-Voltmeter Display: 3½ digit, 7segment LED, auto polarity & decimal indication., Voltage Range : 0.000-2.000V, Current Display : 3½ digit, 7segment LED Current Range : 0-2000mA Selector Switch at T-I position :-Current Display : 3½ digit, 7segment LED Current Range : 0-20mA, Temperature Display : 3½ digit, 7segment LED, Temperature Range : Room temperature to 60.0°C, Oven : Heater pin 4 & 5., Temperature pin 1 & 2 Oven Connector : 5 Pin, DIN type, LED Connector : 3 Pin, DIN type Oven with Temperature Sensor :-Heating Element : 20 ohm, Oven Connector : 5 Pin, DIN type Ambient Temperature: 60° C, Temperature Sensor: Pt100, Output Pin : Heater pin 4 & 5. Temperature pin 1 & 2	INDOSAW LEYBOLD PHYWE
2	Photo-electric effect: photo current versus intensity and wavelength of light; maximum energy of photo-electrons versus frequency of light <u>Technical Specification</u> OPTICAL BENCH :-Material : Aluminium alloy, Type : Hexagonal section, Scale : 0-100cm , Least count : 1mm DC POWER SUPPLY AC/DC :- Output :2,3,4,5,6,8,10 & 12V AC Full wave rectified unsmooth & unregulated DC, Overload : Resettable thermal trip, Input : 230V A,50Hz POLARIZER/ANALIZER :-Angle: Adjustable(0-90°), Aperture: 20mm dia, Frame: 130mm dia, to avoids scattering of lights, Rod: 10mm dia LAMP HOUSING :-Lamp: 12v,21v, Lens: Spherical condenser, to and for adjustment Connection: 4 mm plug lead, Mounting rod: 10mm dia, Housing: Aluminium, Heat ventilation arrangement CONVEX LENS IN HOLDER :-Focal length: 100mm,Diameter of Lens: 50mm, Frame Diameter: 130mm to avoid scattering of light, Rod of Diameter: 10mm PHOTO RESISTOR LDR IN MOUNT :-Photo resistor: CDS(cadmium Sulphide) Aperture: 10mm,clear, Mounting rod: 10mm dia, Connection: 4mm safety terminals Working voltage: 0-16V DC ADJUSTABLE SLIT SELF CENTERING :-Slit width: 0-2 mm, Height: 6 mm, Frame diameter: 120mm to avoid scattering of light, Mounting rod: 10mm dia	INDOSAW LEYBOLD PHYWE

3	<p>To determine work function of material of filament of directly heated vacuum diode. <u>Technical Specification</u> DC Supply :0-250V, Vacuum diode, DC Voltmeter : (Moving Coil)-2nos, DC Ammeter: (Moving coil)-2nos, Variable Pot:2nos, Front panel built with high class insulated sheet, Circuit & Symbol diagram printed on front panel, Mains Power :230V/50Hz</p>	INDOSAW LEYBOLD PHYWE
4	<p>To determine the Planck's constant using LEDs of at least 4 different colours. <u>Technical Specification</u> PLANCK'S CONSTANT APPARATUS:- Selector Switch : V-I and T-I experiment Selector Switch at V-I position :-Voltmeter Display: 3½ digit, 7segment LED, auto polarity& decimal indication, Voltage Range : 0.000-2.000V, Current Display : 3½ digit, 7segment LED Current Range : 0-2000µA Selector Switch at T-I position :-Current Display : 3½ digit, 7segment LED, Current Range : 0-20mA, Temperature Display : 3½ digit, 7segment LED, Temperature Range : Room temperature to 60.0°C, Oven : Heater pin 4 & 5.Temperature pin 1 & 2, Oven Connector : 5 Pin, DIN type, LED Connector : 3 Pin, DIN type, Input Voltage : 220V, 50Hz AC, Fuse : 1A, 250 V OVEN WITH TEMPERATURE SENSOR:- Heating Element : 20 ohm, Oven Connector : 5 Pin, DIN type, Ambient Temperature : 60° C, Temperature Sensor : Pt100, Output Pin : Heater pin 4 & 5., Temperature pin 1 & 2 LED SPECIFICATION Yellow LED Size : 5mm,Wave Length : 590nm, Connector : 3pin ,Din Type Red LED Size : 5mm,Wave Length : 700nm, Connector : 3pin ,Din Type Orange LED Size : 5mm,Wave Length : 570nm, Connector : 3pin ,Din Type Green LED Size : 5mm,Wave Length : 500nm, Connector : 3pin ,Din Type</p>	INDOSAW LEYBOLD PHYWE
5	<p>To determine the value of e/m by (a) Magnetic focusing <u>Technical Specification</u> To study charge of an electron by using Magnetic Focusing method. Kit comprises of High voltage Power Supply with intensity, focus X, Y deflection & Solenoid current controls., Two meters provided for acceleration voltage & for solenoid current controls. One 3" CRT mounted on Teak Wood Stand & a Ring Type Solenoid slides over the CRT. Dimension 11"x7"x4".</p>	INDOSAW LEYBOLD PHYWE
6	<p>To determine the value of e/m by (b) Bar magnet <u>Technical Specification</u> Cathode Ray Tube : 3" CRT, Dimension 11"x7"x4" ,Power supply for Cathode ray tube Stand For CRT, Compass, Compass Stand, Bar Magnet</p>	INDOSAW LEYBOLD PHYWE
7	<p>To show the tunneling effect in tunnel diode using I-V characteristics <u>Technical Specification</u> Inbuilt Fixed DC regulated power supply, DC Voltmeter : 0-600mV, DC Ammeter : 0-50mA Tunnel Diode : IN 3717</p>	INDOSAW LEYBOLD PHYWE
8	<p>To determine the wavelength of H-alpha emission line of Hydrogen atom <u>Technical Specification</u> Advanced Spectrometer:- Scale : Brass, Dia. 175mm., Objective : Achromatic lens, f = 178mm, Aperture 32mm, Slit : German silver with knurled screw, Reticle : 90° cross etched on glass Least count : 20 seconds, Eyepiece : 15X, Ramsden eyepiece, Vernier : 4 verniers (Telescope & Prism table), Base : 220mm dia., Aluminium Casting, Special features: Spindle & other critical component manufactured on CNC machine. Supplied in wooden box. Diffraction Grating:-Size : 89 X 38 mm, Aperture size : 16 X 9 mm, Rulings : 100,300,600 lines/mm Hydrogen Tube:-Gas : Hydrogen research grade, Violet : 420, 440nm, Blue : 490nm,Red : 670nm Spectrum Tube Power Supply:- Input Voltage : 220V, 50 Hz AC, Output Voltage : 0-5000V (open circuit), Overload : 2mA (Max.) with reset switch, Socket : Spring loaded Protection window for tube with red switch for safe operation</p>	INDOSAW LEYBOLD PHYWE

9	<p>To setup the Millikan oil drop apparatus and determine the charge of an electron <u>Technical Specification</u> Millikan's Apparatus: Input Voltage : AC 220V, 50Hz, Output Power : 5W., Plate Voltage : 0~500V DC, Plate Distance : 5±0.2mm., Total Magnification : 30X, Linear field of vision : =3mm. Scale division : 2±0.01mm., Objective lens : 100 lines/mm., Atomizer-Bottle material : Glass Sprayer : Throat double pipe sprayer</p>	INDOSAW LEYBOLD PHYWE
10	<p>To determine the wavelength of Laser light using Diffraction of Single Slit & Double Slit. <u>Technical Specification</u> OPTICAL BENCH:- Material : Aluminium alloy, Type : Hexagonal section, Scale : 0-100cm , Least count : 1mm DIODE LASER:- Peak wavelength : 635nm, Operating voltage : 5V DC , Operating current : 250mA, Optical power : 0.4-0.8mW, Laser product : Class II, Operating temp. : 0 - 40°C Storage temp. : -10 to 50°C PIN HOLE PHOTO DETECTOR:- Detector : Silicon photocell, Terminals : 4mm safety socket, Aperture : 1 mm, Rod : 10 mm diameter SLIT HOLDER:-Clear Aperture : 45x45mm, Object holder : Clip type, Mounting Rod : 10mm diameter SADDLE WITH MICROMETER:-Material : Aluminium, Transverse Motion : 10-0-10mm, Least count : 0.02mm, Locking : Spring loaded, Motion : X-Y axis, Holder : 10mm dia. SINGLE WIRE:- Frame size : 50mm x 50mm, Clear aperture : 15 mm dia. (approx.) , Wire thickness : 0.5mm (approx.) CROSS WIRE:- Frame size : 50mm x 50mm, Clear aperture : 15 mm dia. (approx.), Wire thickness : 0.5mm (approx.) TRANSVERSE SADDLE:- Material : Aluminium, Locking : Spring loaded, Motion : X-Y axis, Holder : 10mm dia. DIFFRACTION SLIDE:- Frame Size : 50mm x 50mm, Slit : Width=0.06mm & Separation=0.20mm (Single, Double), Diffraction grating : 80 lines / mm, Diffraction grating : 300 lines / mm, Single slit : Tapered, Double slit : Tapered, Metal gauze : 300 mesh All individually mounted in slide frames and protected by two Glass plate</p>	INDOSAW LEYBOLD PHYWE
11	<p>To determine (1) wavelength and (2) angular spread of He-Ne laser using plane diffraction grating <u>Technical Specification</u> OPTICAL BENCH:- Material : Aluminium alloy, Type : Hexagonal section, Scale : 0-100cm , Least count : 1mm He-Ne LASER:- Wavelength : 632.8 nm, Working current : 4mA ~ 6mA, Output power : > 2mW Working time : > 8 hrs., Working voltage : AC 220 V ± 22 V, Input Power : <2 W Dimension : 300x62x82 mm, Weight : 1.5 kg (approx.) SETOF13 OBJECTS:- It consists of 13 Objects: Single slit, double slit, multiple slit 3, multiple slit 4, multiple slit 5, single tapered slit, fine, grating, 4 holes, circular opaque spot, gray filter, mesh, coarse grating & grid pattern., Frame Size : 50mm x 50mm PRISM TABLE:- Disc: 75mm Diameter. Rod: 10 mm diameter. OBJECT SCREEN:- Material : Translucent, Acrylic., Size : 300 x 300 mm, Rod : 10 mm diameter CYLINDRICAL BASE:- Material : Ferrous, Mount : Rod 10-14mm dia: Flat object up to 10mm, Groove : Slide object,30x10mm (LxW) GLASS SCALE:- Length : 15cm, Least Count : 1mm SLIT HOLDER:- Clear Aperture : 45x45mm, Object holder : Clip type, Mounting Rod : 10mm diameter LENS IN HOLDER:- SL072 -10 cm 40,SL070 -5 cm 40, SL062 +10 cm 40, SL064 +20 cm 40</p>	INDOSAW LEYBOLD PHYWE

COMPUTER LAB (FOR C., C++, SCILAB)

Sl No	ITEM DESCRIPTION	MAKE
1	Desktop PC	DELL/ACER/LENEVO
2	Battery Backup	
3	Computer Table	GODREJ
4	Storage Almirah	GODREJ
5	Working Table	GODREJ
6	Window's 10 Operating System	
7	Anti-Virus	QUICKHEAL

HOD

Department of Physics

kanpur Anchalika(degree) Mahavidyalaya,kanpur

LIST OF REQUIREMENTS FOR DEPARTMENT OF BOTANY

SL NO	NAME OF THE INSTRUMENTS/ARTICLES WITH SPECIFICATION	Make
1	<p>UV Spectrometer <u>Technical Specification</u> Optical System : Single beam, wavelength range:195nm-1020nm,spectral bandwidth:2nm,wavelength repeatability:1nm,Stray light :<=0.3%@220nm,photometric accuracy : ± 0.5%T,Photometric repeatability :0.2%T,stability : ± 0.004A/h @ 500nm,work pattern : 0-200% T,-0.3-3A,Dispaly mode :4 LCD</p>	INDOSAW/ AELAB/ DIDALAB
2	<p>Colorimeter <u>Technical Specification</u> 8 filter mains operated with optical density, 2 ½ digit LED Display,Range-400 to 700mm,1ml solution measurement</p>	INDOSAW/ AELAB/ DIDALAB
3	<p>Centrifuge <u>Technical Specification</u> A Highly Stable, low noise, low vibration machine. Table top model with digital timer 0-59 minutes range and variable speed regulator, maximum RPM is 5200, cover is made of transparent acrylic and is light weight, operates on 220 Volt. 50 Hz</p>	INDOSAW/ AELAB/ DIDALAB
4	<p>Autoclave <u>Technical Specification</u> Deluxe model are fitted with gun metal lid. and having inner and outer chamber made of S.S., are also fitted with vacuum pressure gauge, steam release cock and safety valve to work on 220 volt AC supply.</p>	INDOSAW/ AELAB/ DIDALAB
5	<p>Incubator <u>Technical Specification</u> Size 350 x 350 x 400 , Temp. Range 190 °C, with the accuracy of 0.01 °C, Double Door with Tuffen Glass window. Inner Chamber made of SS 304 Grade,</p>	INDOSAW/ AELAB/ DIDALAB
6	<p>Electrophoresis Apparatus <u>Technical Specification</u> Mini horizontal, Submarine with combs. Leak proof, Moulded in single piece made of polycarbonate. 99.9% pure platinum wire used in electrode.</p>	INDOSAW/ AELAB/ DIDALAB
7	<p>Compound Microscope <u>Technical Specification</u> Width-17 inch, Height-34 inch, Depth-24 inch, Weight-4.5 g</p>	INDOSAW/ AELAB/ DIDALAB
8	<p>Electron Microscope</p>	INDOSAW/ AELAB/ DIDALAB
9	<p>Ocular micrometer <u>Technical Specification</u> Huygenian 10X eye piece fitted with ocular disc of 10mm divided into 100 divisions</p>	INDOSAW/ AELAB/ DIDALAB
10	<p>Stage micrometer <u>Technical Specification</u> Calibrated glass slide with 1mm scale length divided into 100 parts, used for determination of objective magnification and measurement of samples.</p>	INDOSAW/ AELAB/ DIDALAB
11	<p>Haemocytometer</p>	INDOSAW/ AELAB/ DIDALAB
12	<p>Laboratory Oven</p>	INDOSAW/ AELAB/

	<p><u>Technical Specification</u> Suitable for temperature up to 250C. External body is made of S.S 304 grade with scratch proof and heat resistance paint, Internal structure including door and chamber are manufactured from either SS/Aluminium, The double walled chamber is filled with high grade insulation to prevent heat loss, heating element is roped in beds and placed at bottom and two sides, Temperature is controlled with a capillary type thermostat and ready by a thermometer, supported on heavy rubber feet to prevent with indicator, temperature control and on/off switch</p>	DIDALAB
13	Anemometer (Digital)	INDOSAW/ AELAB/ DIDALAB
14	Hygrometer	INDOSAW/ AELAB/ DIDALAB
15	TLC Chamber	INDOSAW/ AELAB/ DIDALAB
16	<p>Weighing balance <u>Technical Specification</u> Capacity-200g,Readability-0.001g(1mg),Repeatability(±)-0.001g,Linearity(±)-0.002g,Pan Size-80mm,Display-LCD with backlight, Calibration -Automatic external, Tare range-Full, Operating Temperature-10°C to 40°C,Dimension(LxWxH)mm-415x405x295,Weight-5.7kg, , Low battery indication, Auto Zero tracking, Over load protection , Operating Supply:230V/50Hz</p>	INDOSAW/ AELAB/ DIDALAB
17	<p>Digital Balance <u>Technical Specification</u> Capacity-200g,Readability-0.001g(1mg),Repeatability(±)-0.001g,Linearity(±)-0.002g,Pan Size-80mm,Display-LCD with backlight, Calibration -Automatic external, Tare range-Full, Operating Temperature-10°C to 40°C,Dimension(LxWxH)mm-415x405x295,Weight-5.7kg, , Low battery indication, Auto Zero tracking, Over load protection , Operating Supply:230V/50Hz</p>	INDOSAW/ AELAB/ DIDALAB
18	<p>Dissecting microscope <u>Technical Specification</u> Provided with cast iron base, closed glass stage having clips to hold specimen, plano concave reflector and detachable hand rests, two eye pieces 10x,20x with bakelite parts</p>	INDOSAW/ AELAB/ DIDALAB
19	Ganong's photometer	BOROSILICATE
20	Farmer's photometer	BOROSILICATE
21	Wilmott's bubbler	
22	T/A Apparatus	
23	Cavity slide	
24	Cavity block	
25	Plane slide (pkt)	BOROSILICATE
26	Cover slip(Pkt)	
27	Tissue Paper(roll)	
28	Beaker (250ml)	BOROSILICATE
29	Beaker (500ml)	BOROSILICATE
30	Petridish (pair)	
31	Watch Glass (dozen)	
32	Mortar & Pestle(set)	
33	Test Tube(pkt)	BOROSILICATE
34	Volumetric flask (100ml)	BOROSILICATE
35	Measuring Cylinder (100ml)	BOROSILICATE
36	Permanent Slide	BOROSILICATE
37	Cork Borer	
38	Staining rack	
39	Dropping Bottle (125ml)	BOROSILICATE
40	Centrifuge tube	BOROSILICATE

41	Ependrop tube	BOROSILICATE
42	Iodine Solution (500ml)	NICE/MERK/ HIMEDIA
43	Safranine (125ml)	NICE/MERK/ HIMEDIA
44	Ethanol (500ml)	NICE/MERK/ HIMEDIA
45	Acetone(500ml)	NICE/MERK/ HIMEDIA
46	Acetocrmine(100ml)	NICE/MERK/ HIMEDIA
47	Acetoocin(100ml)	NICE/MERK/ HIMEDIA
48	Copper Sulphate(500gm)	NICE/MERK/ HIMEDIA
49	Sodium Tartarate(500gm)	NICE/MERK/ HIMEDIA
50	Sodium Hydroxide(500gm)	NICE/MERK/ HIMEDIA
51	Ammonium Sulphate(500gm)	NICE/MERK/ HIMEDIA
52	Sodium Carbonate(500gm)	NICE/MERK/ HIMEDIA
53	Sudan III Solution(125ml)	NICE/MERK/ HIMEDIA
54	Malachite green (25gm)	NICE/MERK/ HIMEDIA

HOD
Department of Botany
kanpur Anchalika(degree) Mahavidyalaya,kanpur

LIST OF REQUIREMENTS FOR DEPARTMENT OF ZOOLOGY

SL NO	NAME OF THE INSTRUMENTS/APPARATUS/ARTICLES WITH SPECIFICATION	Make
1	Electron microscope	INDOSAW/ AELAB/ DIDALAB
2	Compound Microscope <u>Technical Specification</u> U Shaped heavy cast iron base with 90 degree inclinable body, stage size is 110 x 110 mm with stage clips, separate knobs for coarse and fine motion are provided on the body, revolving triple nose piece carrier the objectives, illumination is by plano-concave reflector, a bright field condenser is fixed to the stage. Maximum 600x. Objective is achromatic and par-focal.	INDOSAW/ AELAB/ DIDALAB
3	Dissecting microscope <u>Technical Specification</u> Provided with cast iron base, closed glass stage having clips to hold specimen, plano concave reflector and detachable hand rests, two eye pieces 10x,20x with bakelite parts	INDOSAW/ AELAB/ DIDALAB
4	Colorimeter <u>Technical Specification</u> 8 filter mains operated with optical density, 2 ½ digit LED Display, Range-400 to 700nm, 1ml solution measurement.	INDOSAW/ AELAB/ DIDALAB
5	Centrifuge	INDOSAW/ AELAB/ DIDALAB
6	UV Spectrometer <u>Technical Specification</u> Optical System : Single beam, wavelength range:195nm-1020nm,spectral bandwidth:2nm,wavelength repeatability:1nm,Stray light :<=0.3%@220nm,photometric accuracy : ± 0.5% T,Photometric repeatability :0.2% T,stability : ± 0.004A/h @ 500nm,work pattern : 0-200% T,-0.3-3A,Display mode :4 LCD	INDOSAW/ AELAB/ DIDALAB
7	Autoclave <u>Technical Specification</u> Suitable for general laboratory and field sterilization of instruments and dressings. Lid is provided with dial pressure gauge, spring loaded safety valve, a joint less neoprene gasket is provided for leak proof sterilization	INDOSAW/ AELAB/ DIDALAB
8	Incubator <u>Technical Specification</u>	INDOSAW/ AELAB/ DIDALAB
9	Electrophoresis Apparatus Mini horizontal, Submarine with combs. Leak proof, Moulded in single piece made of polycarbonate. 99.9% pure platinum wire used in electrode.	INDOSAW/ AELAB/ DIDALAB
10	Ocular micrometer <u>Technical Specification</u> Huygenian 10X eye piece fitted with ocular disc of 10mm divided into 100 divisions	INDOSAW/ AELAB/ DIDALAB
11	Stage micrometer <u>Technical Specification</u> Calibrated glass slide with 1mm scale length divided into 100 parts, used for determination of objective magnification and measurement of samples.	INDOSAW/ AELAB/ DIDALAB

12	Haemocytometer	INDOSAW/ AELAB/ DIDALAB
13	Laboratory Oven Technical Specification Suitable for temperature up to 250C. External body is made of S.S 304 grade with scratch proof and heat resistance paint, Internal structure including door and chamber are manufactured from either SS/Aluminium, The double walled chamber is filled with high grade insulation to prevent heat loss, heating element is roped in beds and placed at bottom and two sides, Temperature is controlled with a capillary type thermostat and ready by a thermometer, supported on heavy rubber feet to prevent with indicator, temperature control and on/off switch	INDOSAW/ AELAB/ DIDALAB
14	TLC Chamber	INDOSAW/ AELAB/ DIDALAB
15	Weighing Balance Capacity-200g,Readability-0.001g(1mg),Repeatability(±)-0.001g,Linearity(±)-0.002g,Pan Size-80mm,Display-LCD with backlight, Calibration -Automatic external, Tare range-Full, Operating Temperature-10°C to 40°C,Dimension(LxWxH)mm-415x405x295,Weight-5.7kg, , Low battery indication, Auto Zero tracking, Over load protection , Operating Supply:230V/50Hz	INDOSAW/ AELAB/ DIDALAB
16	Digital Balance Technical Specification Capacity-200g,Readability-0.001g(1mg),Repeatability(±)-0.001g,Linearity(±)-0.002g,Pan Size-80mm,Display-LCD with backlight, Calibration -Automatic external, Tare range-Full, Operating Temperature-10°C to 40°C,Dimension(LxWxH)mm-415x405x295,Weight-5.7kg, , Low battery indication, Auto Zero tracking, Over load protection , Operating Supply:230V/50Hz	INDOSAW/ AELAB/ DIDALAB
17	pH meter Technical Specification pH range-0.00 to 14.00pH,Temperature-0 to 50°C, Display- large LCD with auto polarity & amp, calibration : 2 buffers calibration 7pH & Amp,4pH & Amp,Accuracy-0.01pH ± 1%,Accessories- pH electrode, Clamp, Rod, Stand, 5 point calibration & android interface, unlimited memory storage with date & time, range 0.00 to 20.00. Operating Supply-230V/50Hz	INDOSAW/ AELAB/ DIDALAB
GLASS WARE		
18	Conical flask (250ml)	BOROSILICATE
19	Beaker (250ml)	BOROSILICATE
20	Plane Slide (pkt)	BOROSILICATE
21	Cover Slip (Pkt)	BOROSILICATE
CHEMICALS		
22	Acetic carmine solution(100ml)	NICE/MERK/ HIMEDIA
23	Acetic acid(500ml)	NICE/MERK/ HIMEDIA
24	Acetone (500ml)	NICE/MERK/ HIMEDIA
25	Hydrochloric Acid(500ml)	NICE/MERK/ HIMEDIA
26	Sulphuric Acid(500ml)	NICE/MERK/ HIMEDIA
27	Nitric Acid(500ml)	NICE/MERK/ HIMEDIA
28	Chloroform(500ml)	NICE/MERK/ HIMEDIA
29	Barium sulphate(500gm)	NICE/MERK/ HIMEDIA
30	Glycerin (500ml)	NICE/MERK/ HIMEDIA

31	Eosin(125ml)	NICE/MERK/ HIMEDIA
32	Haematoxylene(125ml)	NICE/MERK/ HIMEDIA
33	Potassium Hydroxide(500gm)	NICE/MERK/ HIMEDIA
34	Sodium Thiosuphate(500gm)	NICE/MERK/ HIMEDIA
35	EDTA(Disodium Salt) 100gm	NICE/MERK/ HIMEDIA
36	Buffer Tablets (4,7,9) Pkt	NICE/MERK/ HIMEDIA
37	Lcishman's stain 250ml	NICE/MERK/ HIMEDIA
38	Formaldehyde (5lt)	NICE/MERK/ HIMEDIA
39	Picric Acid (125ml)	NICE/MERK/ HIMEDIA
MODELS		
40	Model of Eye	INDOSAW/ AELAB/ DIDALAB
41	Model of Ear	INDOSAW/ AELAB/ DIDALAB
42	Model of Brain	INDOSAW/ AELAB/ DIDALAB
43	Model of Kidney	INDOSAW/ AELAB/ DIDALAB
44	Model of Nose	INDOSAW/ AELAB/ DIDALAB
45	Model of Human Skeleton (Full Size)	INDOSAW/ AELAB/ DIDALAB
46	Disarticulated bones of rabbit	INDOSAW/ AELAB/ DIDALAB
47	Bones of chick	INDOSAW/ AELAB/ DIDALAB
48	Bones of Frog	INDOSAW/ AELAB/ DIDALAB
49	Lab Infrastructure development Furniture & water supply	

LIST OF REQUIREMENTS FOR DEPARTMENT OF CHEMISTRY

SL NO	NAME OF THE INSTRUMENTS/APPARATUS/ARTICLES WITH SPECIFICATION	Make
1	Digital Electronics Balance (0.001gm - 200gm) <u>Technical Specification</u> Capacity-200g,Readability-0.001g(1mg),Repeatability(±)-0.001g,Linearity(±)-0.002g,Pan Size-80mm,Display-LCD with backlight, Calibration -Automatic external, Tare range-Full, Operating Temperature-10°C to 40°C,Dimension(LxWxH)mm-415x405x295,Weight-5.7kg, , Low battery indication, Auto Zero tracking, Over load protection , Operating Supply:230V/50Hz	INDOSAW/ AELAB/ DIDALAB
2	Digital Electronics Balance (0.01gm - 600gm) <u>Technical Specification</u> Capacity-600g,Readability-0.01g(10mg),Repeatability(±)-0.001g,Linearity(±)-0.02g,Pan Size-12mm,Display-Seven segment LED, Calibration -Automatic external, Tare range-Full, Operating Temperature-10°C to 40°C,Dimension(LxWxH)mm-360x230x140,Weight-2.5kg, Low battery indication, Auto Zero tracking, Over load protection, Operating Supply:230V/50Hz	INDOSAW/ AELAB/ DIDALAB
3	Charcoal Block	
4	Wire Gauge with Frame	
5	Stop watch mechanicals <u>Technical Specification</u> 1/10 Second Recorder, Stopwatch 504 Mechanical Watch Timer 13 Jewel Brass Chromed Professional Sport Watch Timer Analog Mechanical Stop Watch 504 Stopwatch Chronometer 1/10 Second Recorder 12h Extended Running Time with 13 Jewels + Start/Stop/Reset	DIAMOND
6	Burette stand with clamp (plastic)	BOROSILICATE
7	Test tune stand (Plastic)	BOROSILICATE
8	Ostward's Viscometer	BOROSILICATE
9	Stalagmeter	BOROSILICATE
10	Digital pH meter <u>Technical Specification</u> pH range-0.00 to 14.00pH,Temperature-0 to 50°C, Display- large LCD with auto polarity & amp, calibration : 2 buffers calibration 7pH & Amp,4pH & Amp,Accuracy-0.01pH ± 1%,Accessories- pH electrode, Clamp, Rod, Stand, 5 point calibration & android interface, unlimited memory storage with date & time, range 0.00 to 20.00. Operating Supply-230V/50Hz	INDOSAW/ AELAB/ DIDALAB
11	Digital conductometer <u>Technical Specification</u> Display -3 digit seven segment LED , Temperature-0-100°C, Frequency-100Hz to 2Khz automatically , Auto temperature Compensation & , Android interface, Unlimited memory storage., Operating Supply : 230v/50Hz	INDOSAW/ AELAB/ DIDALAB
CHEMICALS		
12	Anilne(500ml)	NICE/MERK/ HIMEDIA
13	Zing dust	NICE/MERK/ HIMEDIA
14	Glacial acetic acid	NICE/MERK/ HIMEDIA
15	Acetanilde acid	NICE/MERK/ HIMEDIA
16	Bromine	NICE/MERK/ HIMEDIA

17	Sulfuric acid	NICE/MERK/ HIMEDIA
18	Potassium iodide	NICE/MERK/ HIMEDIA
19	Methyl acetate	NICE/MERK/ HIMEDIA
20	Sodium thiosulphate	NICE/MERK/H IMEDIA
21	Silver nitrate	NICE/MERK/H IMEDIA
22	Iodine	NICE/MERK/ HIMEDIA
23	Bleaching powder	NICE/MERK/ HIMEDIA
24	Ethanol	NICE/MERK/ HIMEDIA
25	Magnesium nitrate	NICE/MERK/ HIMEDIA
26	Acetone	NICE/MERK/ HIMEDIA
27	Potassium sulphate	NICE/MERK/ HIMEDIA
28	Copper chloride	NICE/MERK/ HIMEDIA
29	Ammonium Ferrous Sulphate	NICE/MERK/ HIMEDIA
30	Starch	NICE/MERK/ HIMEDIA
Glass wares and plastics		
31	Regent bottle NM (500ml)	BOROSILICATE
32	Regent bottle WM (250ml)	BOROSILICATE
33	Conical flask (100ml)	BOROSILICATE
34	Conical flask (250ml)	BOROSILICATE
35	Round bottom flask (500ml)	BOROSILICATE
36	Measuring cylinder (100ml)	BOROSILICATE
37	Separating funnel (125ml)	BOROSILICATE
38	Separating funnel (250ml)	BOROSILICATE
39	Beaker (250ml)	BOROSILICATE
40	Beaker (500ml)	BOROSILICATE
41	Pipette (10ml) Volumetric 10ml	BOROSILICATE
42	Pipette (25ml) Volumetric 25ml	BOROSILICATE
43	Burette 50ml plastic 50ml	BOROSILICATE
44	Wash bottle plastic (500ml)	BOROSILICATE
45	Specific gravity bottle (25ml)	BOROSILICATE
46	Capillary tube	BOROSILICATE
47	Measuring flask (100ml)	BOROSILICATE
48	Weighing bottle (50ml)	BOROSILICATE
49	Test tube	BOROSILICATE
50	Aspirator bottle cap plastic (10lt.)	BOROSILICATE
LAB INFRASTRUCTURAL DEVELOPMENT		
	Setting of hard top on lab. Table, fitting of wash basins and water supply to lab tables	

HOD
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