

Faculty of Technology
B. Tech. Pharmaceutical Technology
(R 2021) Semester – II

Course Code: BE3272		
Course Title: Basic Electrical, Electronics and Instrumentation Engineering Laboratory		
Sl. No.	Description of Equipment	Required numbers (for batch of 30 students)
1.	Verification of ohms and Kirchhoff's Laws 1. DC Regulated Power supply (0 - 30 V variable) 2. Bread Board 3. Resistors 4. Multimeter 5. Connecting wires	1 1 As per Circuit diagram 1 As Required
2.	Three Phase Power Measurement 1. Three Phase Variable Load, 2. Ammeters 0-10 A, MI, 3. Wattmeters 0-5 A, 300V, 4. Voltmeter 0-300v,MI 5. Connecting wires	1 2 2 1 As Required
3.	Load test on DC Shunt Motor. 1. Ammeter MC (0-20A) 2. Voltmeter MC (0-300)V 3. Rheostat 7.5 Ω , 10 A 4. Tachometer 5. Field Rheostat 175 Ω , 1.5 A 6. Connecting wires	1 1 1 1 1 As Required
4.	Load test on Self Excited DC Generator 1. DC shunt generator(0- 300V) 2. Ammeter (0-30 A), (0-2A) 3. Voltmeter (0-30V) 4. Rheostat 175 Ω , 250 Ω 5. Tachometer 6. Connecting Wires	1 1 1 1 1 As Required
5.	Load test on Single phase Transformer 1. Ammeter (0-30) A, (0-5) A 2. Voltmeter (0-150)V, (0-300)V 3. Wattmeter – 300V, 5A, UPF 4. Autotransformer 5. Single phase Transformer 6. Connecting Wires	1 1 1 1 1 As Required
6.	Load Test on Induction Motor 1. Ammeter MI (0-20A) 2. Voltmeter MI (0-300)V 3. Wattmeter – 300V, 30 A 4. Tachometer – Digital 5. Connecting Wires 6. Single phase Induction motor	1 1 1 1 As Required 1

7.	<p>Characteristics of PN and Zener Diodes</p> <ol style="list-style-type: none"> 1. PN Diode (BY127, OA79), Zener diode (6.8V, 1A) 2. Resistor 1 KΩ, 100Ω 3. Bread Board 4. DC Regulated Power supply (0 - 30 V variable) 5. Multimeter 6. Connecting wires 	<p>1 1 1 1 1 As Required</p>
8.	<p>Characteristics of BJT</p> <ol style="list-style-type: none"> 1. Transistor (No-BC548) 2. Resistors- 1kΩ, 470KΩ, 1MΩ 3. Bread Board DC Regulated Power supply (0 - 30 V variable) 5. Multimeter 6. Connecting wires <p>Characteristics of SCR</p> <ol style="list-style-type: none"> 1. D C Power Supply (0-128 V), (0-32V), 2. Voltmeter (0-100V) 3. SCR TYN604 4. Digital multimeter 5. Ammeters (0-100mA, 0-25mA, 0-1mA) 6. Resistors 1KΩ, 1KΩ 7. Bread board 8. Connecting Wires <p>Characteristics of MOSFET</p> <ol style="list-style-type: none"> 1. MOSFET (2N7000) 2. Bread board 3. resistor (1KΩ, 100KΩ) 4. DC power supply (0-30V) 5. Multimeter 6. Bread board 7. Connecting Wires 	<p>1 1 1 1 1 As Required</p> <p>1 1 1 1 1 1 As Required</p> <p>1 1 1 1 1 As Required</p>
9.	<p>Design and analysis of Half wave and Full Wave rectifiers</p> <ol style="list-style-type: none"> 1. Diodes (Si-1N4007) – 4 2. Resistor 1KΩ 3. Capacitor 100μF 4. Digital Multimeter 5. CRO 6. Transformer (6-0-6)V 7. Bread Board 8. Connecting Wires 	<p>1 1 1 1 1 1 1 As Required</p>
10.	<p>Measurement of displacement of LVDT</p> <ol style="list-style-type: none"> 1. LVDT Kit 2. Multimeter 	<p>1 1</p>

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(R 2021) Semester – III
PY3311 Microbiology Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Autoclave	2
2.	Hot Air Oven	2
3.	Incubators	2
4.	Light Optical Microscopes	6
5.	Incubator Shaker	2
6.	Colorimeter	2
7.	Lamina Flow Chamber	2
8.	Colony counter	2
9.	Laminar air flow	2

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PY3312 Biochemistry And Physiology Laboratory

Sl.No.	Description of Equipment	Required members (for
1.	Optical Microscope	10
2.	Calorimeter	1
3.	Haemocytometer	20
4.	Neubaur's chamber	20
5.	UV-vis Spectrophotometer	1
6.	Hot water bath	3
7.	Hematocrit	20
8.	Micro haematocrit centrifuge	1
9.	Stop watch	6
10.	TLC Ninhydrin sprayer	2
11.	RBC Dilution pipette	20
12.	WBC Dilution pipettes	20
13.	ECG Apparatus	1
14.	Sphygmomanometer	20
15.	Westergren Pipette	20
16.	Westergren Tube / Westerngren Stand	20
17.	Stethoscope	20
18.	Peak flow meter	10
19.	Spirometer	10

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PY3411 Pharmaceutical Chemistry Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Vacuum filtrationunit	3
2.	Refluxcondenser	30
3.	Hotair oven	1
4.	Waterbath	5
5.	Distillationunit	1
6.	Melting point apparatus	2
7.	pH meter	5
8.	Electronic Weighing balance	5
9.	Heating Mantle	30
10.	Vacuum dryer	10
11.	Viscometer	30
12.	UV visible spectrophotometer	1
13.	Separating funnel	30
14.	Gutzeit apparatus	30

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(R 2021) Semester – IV
PY3412 physical Pharmaceutics Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Optical Microscope	5
2.	Stage Micrometer	5
3.	Eye piece micrometer	5
4.	Stalagmometer	10
5.	Ostwald's Viscometer	10
6.	Brookfield viscometer	1
7.	Tapped density apparatus	3
8.	Andreason pipette	3
9.	Sieve shaker with sieve sets of different sizes	1
	GLASSWARES REQUIRED Pycnometer, Funnel, Beakers, Measuring cylinders, Dessicator, Mortar and pestle	

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(R 2021) Semester – V
PY3511 Dosage Forms Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Tablet punching machine – Mini press	1
2.	Automatic capsule filling machine	1
3.	pH meter	2
4.	Dissolution apparatus	5
5.	Liquid filling Machine	2

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(R 2021) Semester – V
PY3512 PHARMACOLOGY LABORATORY

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Computer with LCD	1
2.	Software packages for experiment	1
3.	Convulsiometer	1
4.	Plethysmograph	1
5.	Permanent Slides for various tissues	1

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PY3611 Heat And Mass Transfer Operations Laboratory

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Thermal Conductivity Apparatus	1
2.	Free and Forced convection apparatus	1
3.	Stefan - Boltzmann apparatus	1
4.	Double pipe Heat Exchanger	1
5.	Shell and Tube Heat Exchanger	1
6.	Open pan evaporation	1
7.	Diffusivity Chamber	1
8.	Simple distillation setup	1
9.	Steam distillation setup	1

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PY3612 Instrumental Techniques In Drug Analysis

Sl.No.	Description of Equipment	Required members (for batch of 30 students)
1.	Digital balance	5
2.	Digital pH meter	5
3.	UV chamber	1
4.	TLC chamber	1
5.	UV-Visible spectroscopy	1
6.	Colorimeter	5
7.	HPLC	1
8.	IR spectroscopy	1