

PART VII – EQUIPMENT AND APPARATUS

**Note: Inspectors are requested to note that items which are marked with an asterisk (*) are common for both B.Pharm and D. Pharm. I --
Department wise List of Minimum equipments required for D. Pharm**

PHARMACEUTICS

Equipment:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Continuous Hot Extraction Equipment	05	05	YES	
2	Conical Percolator	05	05	YES	
3	Tincture Press	01	01	YES	
4	Hand Grinding Mill	01	01	YES	
5	Disintegrator*	01	01	YES	
6	Ball mill*	01	01	YES	
7	Hand operated Tablet machine	01	01	YES	
8	Tablet Coating Pan unit with hot air blower laboratory size*	01	01	YES	
9	Polishing pan laboratory size	01	01	YES	
10	Monsanto's hardness tester	01	01	YES	
11	Pfizer type hardness tester	01	01	YES	
12	Tablet disintegration test apparatus IP*	01	01	YES	
13	Tablet dissolution test apparatus IP*	01	01	YES	
14	Granulating sieve set	10	10	YES	
15	Tablet counter – small size	05	05	YES	
16	Friability tester*	01	01	YES	
17	Collapsible tube – Filling and sealing equipment*	01	01	YES	
18	Capsule filling machine – Lab size*	01	01	YES	
19	Digital balance*	01	01	YES	
20	Distillation unit for distilled water	02	02	YES	
21	Deionisation unit	01	01	YES	
22	Glass distillation unit for water for injection	01	01	YES	
23	Ampoule washing machine	01	01	YES	
24	Ampoule filling and sealing machine*	01	01	YES	
25	Sintered glass filters for bacteria proof filtration (four different grades)	Adequate	Adequate	YES	

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26	Millipore filter (3 grades)	Adequate	Adequate	YES	
27	Autoclave*	01	01	YES	
28	Hot air sterilizer	01	01	YES	
29	Incubator	01	01	YES	
30	Aseptic cabinet	01	01	YES	
31	Ampoule clarity test equipment*	01	01	YES	
32	Blender	01	01	YES	
33	Sieves set (Pharmacopoeial standard)*	02	02	YES	
34	Lab Centrifuge	01	01	YES	
35	Ointment slab	Adequate	Adequate	YES	
36	Ointment spatula	Adequate	Adequate	YES	
37	Pestle and mortar porcelain	Adequate	Adequate	YES	
38	Pestle and mortar glass	Adequate	Adequate	YES	
39	Suppository moulds of three sizes	Adequate	Adequate	YES	
40	Refrigerator	01	01	YES	

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

PHARMACEUTICAL CHEMISTRY

Equipment:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Refractometer	01	01	YES	
2	Polarimeter	01	01	YES	
3	Photoelectric colorimeter	01	01	YES	
4	Ph meter*	01	01	YES	
5	Atomic model set*	02	02	YES	
6	Electronic balance*	01	01	YES	
7	Periodic table chart*	Adequate	Adequate	YES	

NOTE: Adequate number of glass ware commonly used in the laboratory should be provided in each laboratory and department.

PHYSIOLOGY & PHARMACOLOGY LABORATORY

Equipment:

Sl.No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Haemoglobinometer	20	20	YES	

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2	Haemocytometer*	10	10	YES	
3	Student's organ bath	01	01	YES	
4	Sherington's rotating drum*	01	01	YES	
5	Frog board	Adequate	Adequate	YES	
6	Tray (dissecting)	Adequate	Adequate	YES	
7	Frontal writing lever*	Adequate	Adequate	YES	
8	Aeration tube*	Adequate	Adequate	YES	
9	Telethermometer	01	01	YES	
10	Pole climbing apparatus*	01	01	YES	
11	Histamine chamber	01	01	YES	
12	Simple lever*	Adequate	Adequate	YES	
13	Sterling heart lever*	Adequate	Adequate	YES	
14	Aerator*	Adequate	Adequate	YES	
15	Histological Slides	Adequate	Adequate	YES	
16	Sphygmomanometer* (B.P. apparatus)	05	05	YES	
17	Stethoscope*	05	05	YES	
18	First aid equipment	Adequate	Adequate	YES	
19	Contraceptive device*	Adequate	Adequate	YES	
20	Dissecting (surgical) instruments	Adequate	Adequate	YES	
21	Balance for weighing small Animals	01	01	YES	
22	Kymograph paper	Adequate	Adequate	YES	
23	Actophotometer*	01	01	YES	
24	Analgesiometer*	01	01	YES	
25	Thermometer	Adequate	Adequate	YES	
26	Plastic animal cage	Adequate	Adequate	YES	
27	Double unit organ bath with thermostat	01	01	YES	
28	Refrigerator	01	01	YES	
29	Digital balance	01	01	YES	
30	Charts	Adequate	Adequate	YES	
31	Human skeleton*	01	01	YES	
32	Anatomical specimen (Heart, brain, eye,,ear,,reproductive system etc.,)*	01 set	01 set	YES	
33	Electro-convulsimeter*	01	01	YES	
34	Stop watch	Adequate	Adequate	YES	
35	Clamp, boss heads, screw clips*	Adequate	Adequate	YES	
36	Syme's Cannula*	Adequate	Adequate	YES	

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NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department t. and department.

PHARMCOGNOSY LABORATORY

Equipment:

SI No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Projection Microscope	01	01	YES	
2	Charts (different types)	Adequate	Adequate	YES	
3	Models (different types)	Adequate	Adequate	YES	
4	Permanent Slides	Adequate	Adequate	YES	
5	Slides and Cover Slips	Adequate	Adequate	YES	

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

PHARMACY PRACTICE LABORATORY

Equipment:

SI No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Colorimeter	2	2	YES	
2	Microscope	Adequate	Adequate	YES	
3	Permanent slides (skin, kidney, pancreas, smooth muscle, liver etc.,)	Adequate	Adequate	YES	
4	Watch glass	Adequate	Adequate	YES	
5	Centrifuge	1	1	YES	
6	Biochemical reagents for analysis of normal and pathological constituents in urine and blood facilities	Adequate	Adequate	YES	
7	Filtration equipment	2	2	YES	
8	Filling Machine	1	1	YES	
9	Sealing Machine	1	1	YES	

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10	Autoclave sterilizer	1	1	YES	
11	Membrane filter	1 Unit	1 Unit	YES	
12	Sintered glass funnel with complete filtering assemble	Adequate	Adequate	YES	
13	Small disposable membrane filter for IV admixture filtration	Adequate	Adequate	YES	
14	Laminar air flow bench	1	1	YES	
15	Vacuum pump	1	1	YES	
16	Oven	1	1	YES	
17	Surgical dressing	Adequate	Adequate	YES	
18	Incubator	1	1	YES	
19	PH meter	1	1	YES	
20	Disintegration test apparatus	1	1	YES	
21	Hardness tester	1	1	YES	
22	Centrifuge	1	1	YES	
23	Magnetic stirrer	1	1	YES	
24	Thermostatic bath	1	1	YES	

NOTE: Adequate number of glass ware commonly used in the laboratory should be provided in each laboratory and the department.

Museum: Every Institution shall maintain a museum of crude drugs, herbarium sheets, botanical specimens of the drugs, and plants, mentioned in the course in addition the following are recommended.

1. Colored slides of medicine plants.
2. Display of popular patent medicines, and
3. Containers of common usage in medicines.

II Department wise List of Minimum equipments required for B. Pharm (for a batch of 20 students)

DEPARTMENT OF PHARMACOLOGY

Equipment:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Microscopes*	15	15	YES	
2	Haemocytometer with Micropipettes*	20	20	YES	
3	Sahli's haemocytometer	20	20	YES	
4	Hutchinson's spirometer	01	01	YES	
5	Spygmomanometer*	5	5	YES	
6	Stethoscope*	5	5	YES	

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	Permanent Slides for various tissues	One pair of each tissue Organs and endocrine glands One slide of each organ system	One pair of each tissue Organs and endocrine glands One slide of each organ system	YES	
8	Models for various organs	One model of each organ system	One model of each organ system	YES	
9	Specimen for various organs and systems*	One model for each organ system	One model for each organ system	YES	
10	Skeleton and bones*	One set of skeleton and one spare bone	One set of skeleton and one spare bone	YES	
11	Different Contraceptive Devices and Models*	One set of each device	One set of each device	YES	
12	Muscle electrodes	01	01	YES	
13	Lucas moist chamber	01	01	YES	
14	Myographic lever	01	01	YES	
15	Stimulator	01	01	YES	
16	Centrifuge	01	01	YES	
17	Electronic Balance	01	01	YES	
18	Physical /Chemical Balance	01	01	YES	
19	Sherrington's Kymograph Machine / Polyrite	10	10	YES	
20	Sherrington Drum*	10	10	YES	
21	Perspex bath assembly (single unit)	10	10	YES	
22	Aerators*	10	10	YES	
23	Computer with LCD	01	01	YES	
24	Software packages for experiment	01	01	YES	
25	Standard graphs of various drugs	Adequate number	Adequate number	YES	
26	Actophotometer*	01	01	YES	
27	Rotarod	01	01	YES	
28	Pole climbing apparatus*	01	01	YES	
29	Analgesiometer (Eddy's hot plate and radiant heat methods)*	01	01	YES	
30	Convulsiometer*	01	01	YES	
31	Plethysmograph	01	01	YES	
32	Digital pH meter	01	01	YES	

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Apparatus:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Folin-Wu tubes	60	60	YES	
2	Dissection Tray and Boards*	10	10	YES	
3	Haemostatic artery forceps	10	10	YES	
4	Hypodermic syringes and needles of size 15,24,26G	10	10	YES	
5	Levers, cannulae*	20	20	YES	

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

DEPARTMENT OF PHARMACOGNOSY**Equipment:**

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Microscope with stage micrometer	15	15	YES	
2	Digital Balance	02	02	YES	
3	Autoclave	02	02	YES	
4	Hot air oven	02	02	YES	
5	B.O.D.incubator	01	01	YES	
6	Refrigerator	01	01	YES	
7	Laminar air flow	01	01	YES	
8	Colony counter	02	02	YES	
9	Zone reader	01	01	YES	

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10	Digital pH meter	01	01	YES	
11	Microscope with stage and oil immersion objective	20	20	YES	
12	Sterility testing unit	01	01	YES	
13	Camera Lucida	15	15	YES	
14	Eye piece micrometer	15	15	YES	
15	Stage micrometer	20	20	YES	
16	Incinerator	01	01	YES	
17	Moisture balance	01	01	YES	
18	Heating mantle	15	15	YES	
19	Flourimeter	01	01	YES	
20	Vacuum pump	02	02	YES	
21	Micropipettes(Single and multi channeled)	02	02	YES	
22	Micro Centrifuge	01	01	YES	
23	Projection Microscope	01	01	YES	

Apparatus:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Reflux flask with condenser	20	20	YES	
2	Water bath	20	20	YES	
3	Clavengers apparatus	10	10	YES	
4	Soxhlet apparatus	10	10	YES	
5	TLC chamber and sprayer	10	10	YES	
6	Distillation unit	01	01	YES	

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY**Equipment:**

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Hot plates	05	05	YES	
2	Oven	03	03	YES	
3	Refrigerator	01	01	YES	
4	Analytical Balances for demonstration	05	05	YES	
6	Suction pumps	06	06	YES	

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7	Muffle Furnace	01	01	YES	
8	Mechanical Stirrers	10	10	YES	
9	Magnetic Stirrers with Thermostat	10	10	YES	
10	Vacuum Pump	01	01	YES	
11	Digital pH meter	01	01	YES	
12	Microwave Oven	01	01	YES	

Apparatus:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Distillation Unit	02	02	YES	
2	Reflux flask and condenser single necked	20	20	YES	
3	Reflux flask and condenser double / triple necked	20	20	YES	
4	Burettes	40	40	YES	
5	Arsenic Limit Test Apparatus	20	20	YES	
6	Nessler's Cylinders	40	40	YES	

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

DEPARTMENT OF PHARMACEUTICS**Equipment:**

Sl. No.	Name	Minimum Required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Homogenizer	05	05	YES	
2	Digital balance (10 mg sensitivity)	05	05	YES	
3	Microscopes	05	05	YES	
4	Stage and eye piece micrometers	05	05	YES	
5	Brookfield's viscometer	01	01	YES	
6	Ball mill*	01	01	YES	
7	Sieve shaker with sieve set*	01	01	YES	
8	Double cone blender	01	01	YES	
9	Propeller type mechanical agitator	05	05	YES	
10	Autoclave*	01	01	YES	
11	Steam distillation still	01	01	YES	

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12	Vacuum Pump*	01	01	YES	
13	Standard sieves, sieve no. 8, 10, 12,22,24, 44, 66, 80	10 sets	10 sets	YES	
14	Tablet punching machine	01	01	YES	
15	Capsule filling machine*	01	01	YES	
16	Ampoule washing machine*	01	01	YES	
17	Ampoule filling and sealing machine*	01	01	YES	
18	Tablet disintegration test apparatus IP	01	01	YES	
19	Tablet dissolution test apparatus IP	01	01	YES	
20	Monsanto's hardness tester	01	01	YES	
21	Pfizer type hardness tester	01	01	YES	
22	Friability test apparatus*	01	01	YES	
23	Clarity test apparatus	01	01	YES	
24	Ointment filling machine*	01	01	YES	
25	Collapsible Tube Crimping Machine*	01	01	YES	
26	Tablet coating pan*	01	01	YES	
27	Magnetic stirrer, 500ml and 1 liter capacity*, with variable speed control.	10	10	YES	
28	Digital pH meter	02	02	YES	
29	All purpose equipment with all accessories	01	01	YES	
30	Aseptic Cabinet	01	01	YES	
31	BOD Incubator	02	02	YES	
32	Bottle washing Machine	01	01	YES	
33	Bottle Sealing Machine	01	01	YES	
34	Bulk Density Apparatus	02	02	YES	
35	Conical Percolator (glass/ copper/ stainless steel)	10	10	YES	
36	Capsule Counter	02	02	YES	
37	Energy meter	02	02	YES	
38	Hot Plate	02	02	YES	
39	Humidity Control Oven	01	00	NO	
40	Liquid Filling Machine	01	01	YES	
41	Mechanical stirrer with speed regulator	02	02	YES	
42	Precision Melting point Apparatus	01	01	YES	
43	Tray Drier	01	00	No	
44	Distillation Unit	01	01	YES	

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Apparatus:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Ostwald's viscometer	15	15	YES	
2	Stalagmometer	15	15	YES	
3	Desiccator*	05	05	YES	
4	Suppository moulds	20	20	YES	
5	Buchner Funnels Small, medium, large	05 each	05 each	YES	
6	Filtration assembly	01	01	YES	
7	Permeability Cups	05	05	YES	
8	Andreason's Pipette	03	03	YES	
9	Lipstick moulds	10	10	YES	

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

PHARMACEUTICAL BIOTECHNOLOGY

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Orbital shaker incubator	01	00	NO	
2	Lyophilizer (Desirable)	01	00	NO	
3	Gel Electrophoresis (Vertical and Horizontal)	01	01	YES	
4	Phase contrast/Trinocular Microscope	01	01	YES	
5	Refrigerated Centrifuge	01	01	YES	
6	Fermenters of different capacity (Desirable)	01	00	NO	
7	Tissue culture station	01	01	YES	
8	Laminar airflow unit	01	01	YES	
9	Diagnostic kits to identify infectious agents	01	01	YES	
10	Rheometer	01	01	YES	
11	Viscometer	01	01	YES	
12	Micropipettes(single and multi)	01 each	01 each	YES	

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	channeled)				
13	Sonicator	01	00	NO	
14	Respinometer	01	01	YES	
15	BOD Incubator	01	01	YES	
16	Paper Electrophoresis Unit	01	01	YES	
17	Micro Centrifuge	01	01	YES	
18	Incubator water bath	01	01	YES	
19	Autoclave	01	01	YES	
20	Refrigerator	01	01	YES	
21	Filtration Assembly	01	01	YES	
22	Digital pH meter	01	01	YES	

NOTE: Adequate number of glassware commonly used in the laboratory should be provided in each laboratory and department.

CENTRAL INSTRUMENTATION ROOM:

Sl. No.	Name	Minimum required Nos.	Available Nos.	Working Yes / No	Remarks of the Inspectors
1	Colorimeter	01	01	YES	
2	Digital pH meter	01	01	YES	
3	UV- Visible Spectrophotometer	01	01	YES	
4	Flourimeter	01	00	NO	
5	Digital Balance (1mg sensitivity)	01	01	YES	
6	Nephelo Turbidity meter	01	01	YES	
7	Flame Photometer	01	01	YES	
8	Potentiometer	01	01	YES	
9	Conductivity meter	01	01	YES	
10	Fourier Transform Infra Red Spectrometer (Desirable)	01	00	NO	
11	HPLC	01	00	NO	
12	HPTLC (Desirable)	01	00	NO	
13	Atomic Absorption and Emission spectrophotometer (Desirable)	01	00	NO	
14	Biochemistry Analyzer (Desirable)	01	00	NO	
15	Carbon, Hydrogen, Nitrogen Analyzer (Desirable)	01	00	NO	
16	Deep Freezer (Desirable)	01	00	NO	
17	Ion- Exchanger	01	00	NO	
18	Lyophilizer (Desirable)	01	00	NO	

*** Items marked with asterisk are common for B.Pharm and D. Pharm**

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