

**Syllabus and Curriculum
of
Diploma in Lab Technician course**

(To be implemented From 2015 - 16 session)

Uttar Pradesh State Medical Faculty, Lucknow.

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OBJECTIVES OF THE COURSE

To prepare a **Lab technician** who –

- Can perform all types of pathological tests.
- Can perform all types of Biochemistry tests.
- Can perform all types of Microbiology tests.
- Can help in processing of Histo-cytopathology.
- Can perform blood bank techniques.

Diploma in Lab Technician course

FIRST YEAR

Paper	Name of Paper	Internal	External	Total
Theory First Paper	General Anatomy, Physiology, Pathology, Pharmacology & Microbiology .	20	80	100
Theory Second Paper	Haematology, Microbiology-I & Biochemistry-I.	20	80	100
Practical		20	80	100

SECOND YEAR

Paper	Name of Paper	Internal	External	Total
Theory First Paper	Relevant diseases & Microbiology-II & Biochemistry-II.	20	80	100
Theory Second Paper	Histo-Cyto pathology, Blood banking & Biomedical waste management.	20	80	100
Practical		20	80	100

**Outline of Curriculum
of
Diploma in Lab Technician course**

FIRST YEAR

THEORY (Classes: 9 AM to 12 Noon)

First paper : Syllabus covers -

1. General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).
2. Only basics of relevant Pathology, Pharmacology & Microbiology.

Second paper : Syllabus covers -

1. Clinical Hamatology & Clinical Microbiology-I.
2. Clinical Biochemistry-I.
3. Hand hygiene & prevention of cross infection.
4. Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).

FIRST YEAR

PRACTICAL (Classes: 1 PM to 4 PM)

Practical classes will be after lunch; from 1 PM to 4 PM.

Students must present in the hospital/ Lab for practicals.

(for curriculum, please see p.no.-21 to 23)

Following subjects must be taught; though there will not be any exam from these-

1. Basic Computer skills.
2. Basic English.
2. **Soft skills like** - Interpersonal relationship skills & moral education.

Outline of Curriculum
of
Diploma in Lab Technician course

SECOND YEAR

THEORY (classes:9 AM to 12 Noon)

First paper : Syllabus covers -

1. Only relevant surgical & medical conditions (relevant to Lab technician).
2. Clinical Microbiology-II & Biochemistry-II.

Second paper : Syllabus covers -

1. Histopathology & Cytopathology.
2. Blood banking & Biomedical waste management.

SECOND YEAR

PRACTICAL (classes:9 AM to 12 Noon)

Practical exams syllabus should cover-

(for details , please see p.no.- 30 to 32)

ELIGIBILITY CRITERIA FOR ADMISSION & DURATION OF THE COURSE

COURSE DURATION:-

- It is 2 years, **full time** Diploma Course.

ELIGIBILITY:-

- Candidate must have passed 12th with
Physics, Chemistry, Biology

Or

Physics, Chemistry, Maths

with 35% marks in Intermediate exams.

(From UP board or any other recognised board).

- Candidate must have completed age of 17 years of age as on 31st December of admission year. There is no maximum age limit for the admission.

SCHEDULE OF EXAMINATION

FIRST YEAR

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	1. General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body). 2. Only basics of relevant Pathology, Pharmacology & Microbiology.	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	1. Clinical Hamatology & Clinical Microbiology-I. 2. Clinical Biochemistry-I. 3. Hand hygiene & prevention of cross infection. 4. Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF EXAMINATION

SECOND YEAR

<u>Paper</u>	<u>Subjects</u>	<u>Mark</u>	<u>Internal Assessment Marks</u>	<u>Total Marks</u>	<u>Pass Marks</u>	<u>Duration of Exam.</u>
<u>First Paper Theory</u>	1. Only relevant surgical & medical conditions (relevant to Lab technician). 2. Clinical Microbiology-II & Biochemistry-II.	75	25	100	50	3 Hours
<u>Second Paper Theory</u>	1. Histopathology & Cytopathology. 2. Blood banking & Biomedical waste management.	75	25	100	50	3 Hours
<u>Practical</u>	Oral & Practical	75	25	100	50	3 Hours

SCHEDULE OF COURSE

(List of holidays, Total hours, Subject wise allotment of hours)

- **List of Holidays:-**

Sundays	- 52 days
Summer vacation	- 10 days
Winter vacation	- 10 days
Gazetted holidays	- 23 days
Preparatory holidays	- 10 days
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Total Holidays	- 105 days
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- **Total Hours :-**

Theory classes per day	- 3 Hours
Practical classes per day	- 3 Hours
Total hours per day	- 6 Hours
Total days & hours in One year (after deduction of holidays)	- 260 days or - 1560 Hours

SCHEDULE OF COURSE

Subject wise allotment of hours

FIRST YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	180 Hrs
	2.Only basics of relevant Pathology, Pharmacology & Microbiology.	80 Hrs
<u>Second Paper Theory</u>	1.Clinical Haematology & Clinical Microbiology-I.	280 Hrs
	2. Clinical Biochemistry-I.	100 Hrs
	3.Hand hygiene & prevention of cross infection.	30 Hrs
	4.Basics life support (BLS) & Cardio-pulmonary resuscitation (CPR).	40 Hrs
<u>Third Paper Practical</u>	As described in curriculum	780 Hrs
<u>Theory: Other Subjects</u> (These subjects must be taught; though there will not be any exam from these)	1.Basic Computer skills.	30 Hrs
	2.Basic English.	30 Hrs
	3.Soft skills like - Interpersonal relationship skills & moral education	10 Hrs

SCHEDULE OF COURSE

Subject wise allotment of hours

SECOND YEAR

Theory (780 Hours) Practical (780 Hours)

<u>First Paper Theory</u>	1. Only relevant surgical & medical conditions (relevant to Lab technician).	180 Hrs
	2. Clinical Microbiology-II & Biochemistry-II.	225 Hrs
<u>Second Paper Theory</u>	1. Histopathology & Cytopathology.	250 Hrs
	2. Blood banking & Biomedical waste management.	125 Hrs
<u>Third Paper Practical</u>	As described in curriculum	780 Hrs

**Details of Curriculum for First Year
Diploma in Lab Technician**

PAPER 1st Theory	Topics	Hours.
1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	1. General Orientation about parts of human body. Various terms used in Anatomy. Total numbers of bones, their names & location. Basic idea about organization of body, from cell to organ systems.	06 Hrs
	2. Structure of Animal cell, Cell organelles & their functions	06 Hrs
	3. Human tissue, types, structure & functions.	10 Hrs
	4. Osteology: Names, location, identification and basic details of all bones. (Details of skull bones is not required).	20 Hrs
	5. Joints: types, basic structure & examples.	06 Hrs
	6. Skin & appendages.	02 Hrs
	7. GIT: : Location, Gross structure, various parts & their functions. Details of process of food ingestion, digestion, absorption & defaecation. (Microscopic structure is not required.)	15 Hrs
	8. Respiratory tract: Location, Gross structure, various parts & their functions. Details of breathing mechanism, different respiratory volumes. (Microscopic structure is not required.)	15 Hrs
	9. Urinary tract: Gross structure, various parts & their functions. (Microscopic structure is not required.) Process of urine formation & voiding.	10 Hrs
	10. Male reproductive system: Only gross structure & functions of different parts. (Microscopic structure is not required.)	05 Hrs
	11. Female reproductive system: Only gross structure & functions of different parts. (Microscopic structure is not required.) Menstrual cycl	05 Hrs

**Details of Curriculum for First Year
Diploma in Lab Technician**

PAPER 1st Theory	Topics	Hours.
1.General Anatomy & Physiology (Cytology, Histology, Osteology and only basics of all organ systems of body).	12. Endocrine system: Hormones secreted by Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal cortex, Adrenal medulla, Gonads & functions of different hormones. (Details of structure of these glands not required).	10 Hrs
	13. Gross structure of brain & spinal cord. Functions of different parts of brain & spinal cord.(Details not required.)	20 Hrs
	14. Blood: Composition & Functions. Details about Plasma, RBCs, WBCs, Platelets, Clotting system.	20 Hrs
	15. Gross structure & functions of sensory Organs - Eye, Ear, Nose, Tongue.(Details not required).	10 Hrs
	16. Basic gross structure of heart, vessels opening into heart & Leaving the heart. Arterial & Venous tree of body.	10 Hrs
	17. Lymphatic system: Structure & Functions.	10 Hrs
	18. Inumune system: Components & various mechanisms of defense.	10 Hrs

**Details of Curriculum for First Year
Diploma in Lab Technician**

PAPER 1st Theory	Topics	Hours.
2.Only basics of relevant Pathology, Pharmacology & Microbiology.	1. Basic steps of Acute & chronic inflammation and Healing of wound.	05 Hrs
	2. Basics of Necrosis & apoptosis.	02 Hrs
	3. Basics of Shock.	02 Hrs
	4. Basics of Disorders of blood coagulation system.	08 Hrs
	5. Basics of Disorders of Immune system of body.	05 Hrs
	6. Modes of disease transmission & prevention of infection.	05 Hrs
	7. Sterilization & methods of sterilization used in hospitals.	10 Hrs
	8. Basic idea about types of Bacteria, Virus, Fungi.	20 Hrs
	9. Routes of drug administration.	02 Hrs
	10. Adverse effects & side effects of drugs.	02 Hrs
	11. Basic idea of Analgesics : Opioid & NSAIDs.	02 Hrs
	12. Basic idea of Drugs use in Cough & expectoration.	01 Hrs
	13. Basic idea of Drugs used in B. asthma & COPD.	02 Hrs
	14. Basic idea of Drugs used in GIT.	03 Hrs
	15. Basic idea of Anti Microbials.	15 Hrs
	16. Basic idea of Anti H-1 Histaminics & Corticosteroids.	01 Hrs
	17. Drugs used in anaemia.	02 Hrs

Details of Curriculum for First Year Diploma in Lab Technician

PAPER 2nd Theory	Topics	Hours.	
1.Clinical Hematology & Clinical Microbiology- I.	1	Introduction to pathology.	03 Hrs
	2	Composition of blood -1.(RBC,WBC,Platelet)	05 Hrs
	3	Composition of blood -2. (Plasma & Plasma Protein)	04 Hrs
	4	Routine Instruments in haematology	20 Hrs
	5	Collection and Preservation of Blood.	05 Hrs
	6	Use of autoanalyser in haematology.	05 Hrs
	7	Making of stains in haematology.	03 Hrs
	8	Preparation of thick & thin smears.	03 Hrs
	9	Leishman stain (PPreparation & method of staining)	03 Hrs
	10	Other stains in haematology (Preparation & Method of staining).	03 Hrs
	11	Anti coagulant vials-their preparation and use.	03 Hrs
	12	Erythrocytes & abnormal erythrocytes	03 Hrs
	13	Reticulocyte count.	03 Hrs
	14	Platelet count.	03 Hrs
	15	Absolute Values.	02 Hrs
	16	Hemoparasites	02 Hrs
	17	ESR,PCV	05 Hrs
	18	Osmotic fragility Test.	05 Hrs
	19	LE Cell I	03 Hrs
	20	Coagulation Disorders.	07 Hrs
	21	Lab Diagnosis of Bleeding Disorders.	05 Hrs
	22	Formation & Composition of Urine	05 Hrs
	23	Collection & Preservation of Urine.	02 Hrs
	24	Abnormal constituents of urine.	03 Hrs
	25	Urinometer & Esbach's Albuminometer	05 Hrs
	26	Physical & Chemical examination of urine.	10 Hrs
	27	Microscopic examination of urine.	10 Hrs
	28	Liver function test.	05 Hrs
	29	Renal Function Test.	05 Hrs
	30	Examination of body fluids -1. (Pleural,Peritoneal & Synovial.)	05 Hrs
	31	Examination of body fluids -2.CSF	05 Hrs
	32	Semen Examination.	05 Hrs
	33	Investigations for Aneamia.	10 Hrs
	34	Hemolytic Aneamia, Foetal Hb.	05 Hrs
	35	Bone Marrow indications,contra indications & aspiration.	15 Hrs
	36	Introduction to leukemia	05 Hrs
	37	Chronic leukemia & acute leukemia.	05 Hrs
	38	Use of auto analyser in Haematology	10 Hrs

**Details of Curriculum for First Year
Diploma in Lab Technician**

PAPER 2nd Theory	Topics		Hours.
1.Clinical Hematology & Clinical Microbiology- I.	39	General introduction & terms used in Microbiology	03 Hrs
	40	Safety measures in Microbiology	03 Hrs
	41	Universal precautions	03 Hrs
	42	Bio-Waste Disposal	03 Hrs
	43	Growth & nutrition of Bacteria	03 Hrs
	44	Care and Handling of Microscopes	03 Hrs
	45	Use, Care and maintenance of common Lab equipments like centrifuges-I	12 Hrs
	46	Use, Care and maintenance of common Lab equipments like centrifuges-II	10 Hrs
	47	Principles & methods of sterilization	05 Hrs
	48	Antiseptics and disinfectants	02 Hrs
	49	PH, Buffer & reagents-I	01 Hr
	50	PH, Buffer & reagents-II	01 Hr
	51	Routine bacteria Culture media-I	02 Hrs
	52	Routine bacteria Culture media-II	02 Hrs
	53	Media for bacterial identification-I	02 Hrs
	54	Media for bacterial identification-II	02 Hrs
	55	Media for Drug Sensitivity Testing	02 Hrs
	57	Classification of staining methods smear preparation	02 Hrs
	58	Gram stains and other routine stains in Microbiology	02 Hrs
	59	Z.N. Stains and other stains for Mycobacterium	02 Hrs
60	Leishman staining	01 Hr	
65	Mechanism of drug resistance in bacteria .	02 Hrs	
66	Anti bacterial sensitivity testing-I	02 Hrs	
67	Anti bacterial sensitivity testing-II	02 Hrs	

**Details of Curriculum for First Year
Diploma in Lab Technician**

PAPER 2nd Theory	Topics		Hours.
2.Clinical Biochemistry- I.	1	Introduction of Biochemistry	05 Hrs
	2	Biochemistry Use in Medicine	05 Hrs
	3	Units of Measurement	05 Hrs
	4	Measurement of Volumetric Apparatus (Pipettes, Flasks & Cylinders)	05 Hrs
	5	Laboratory Hazards	05 Hrs
	6	Laboratory Safety	05 Hrs
	7	Laboratory Design & Administration	10 Hrs
	8	Sample Collection	10 Hrs
	9	Universal Precautions	05 Hrs
	11	Concept and Calculations Molecular Weight	03 Hrs
	12	Concept and Calculations Equivalent Weight	03 Hrs
	13	Basic Principles of Centrifugation	03 Hrs
	14	Mole, Molar, Buffer & Normal Solution	03 Hrs
	15	Definitions of Acid Base	03 Hrs
	16	Calorimeter	10 Hrs
	17	Preparation of Anticoagulants	05 Hrs
	18	Preservation of Anticoagulants	05 Hrs
	19	PH & Buffer	05 Hrs
	20	Water Purification	05 Hrs
	21	Sterilization	05 Hrs

**Details of Curriculum for First Year
Diploma in Lab Technician**

PAPER 2nd Theory	Topics	Hours.
3.Hand hygiene & prevention of cross infection.	1. Hand hygiene & method of Hand washing.	15 Hrs
	2. Prevention of cross infection.	15 Hrs

PAPER 2nd Theory	Topics	Hours.
4.Basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	1. Code blue.	05 Hrs
	2. Details of basic life support (BLS) & Cardio-pulmonary resuscitation (CPR).	35 Hrs

**Curriculum
for
Practical :- First Year
Diploma in Lab Technician**

Topics	
Practical	1 Making of slide and staining.
	2 Assessing hemoglobin with different methods.
	3 Loading of Neubauer's chamber.
	4 TLC
	5 DLC
	6 ESR & PCV
	7 Reticulocyte count
	8 RBC Count
	9 Platelet Count
	10 Buffy coat preparation
	11 Coomb's Test - Direct & Indirect
	12 LE Cell
	13 Osmotic fragility Test
	14 PT/PC
	15 Blood grouping methods
	16 Uses of anti-coagulants
	17 Bone Marrow Aspirations
	18 Cell Count in Acute Leukemia
	19 Cell Count in Chronic Leukemia
	20 Examination of Malarial Parasite.
	21 Examination of Microfilaria.
	22 Fetal Hemoglobin
	23 Urine collection and preservation
	24 24 hrs. Urine protein estimation
	25 Urine examination – Physical / Chemical
	26 Urine examination – Microscopy
	27 CSF examination.
	28 Semen examination
	29 Other body fluid examination
	30 Rh antibody titre
	31 Automation in haematology

**Curriculum
for
Practical :- First Year
Diploma in Lab Technician**

		Topics
Practical	32	Normal & Molar
	33	Percentage
	34	Buffers
	35	Glucose
	36	Albumin
	37	Physical Examination
	38	Chemical Examination (Chloride, Sulphate, Urea, Ammonia, Phosphate)
	39	Physical Examination
	40	Chemical Examination (Protein, Glucose, Ketone Bodies, Bile Salt, Bile Pigment, Blood, Urobilinogen, Chyle, Phenyl Ketoneuria, Alkaptonuria)
	41	Normal Value
	42	. Hyper Value & Hypo Value
	43	Normal Value
	44	Hyper Value
	45	Normal Value
	46	Hyper Value & Hypo Value
	47	Programming of Different Analytes
	48	Standardization

**Curriculum
for
Practical :- First Year
Diploma in Lab Technician**

	Topics	
	Practical	49
50		Preparation of load for autoclaving & hot air sterilization
51		Autoclaving
52		Use of hot air oven
53		Disinfection
54		Preparation of Buffer & reagents
55		Preparation of Culture media (Selective medias)
56		Preparation of Culture media (Special medias)
57		Smear preparation
58		Use of centrifuges
59		Preparation of stains
60		Gram's staining
61		Zeihl Neelsen staining
62		Leishman / romanowsky staining
63		Albert's & other special staining
64		Inoculation of culture media-I
65		Inoculation of culture media-II
66		Drug Sensitivity Testing-I
67		Drug Sensitivity Testing-II

**Details of Curriculum for Second Year
Diploma in Lab Technician**

PAPER 1st Theory	Topics	Hours.
1. Only relevant surgical & medical conditions (relevant to Lab technician).	1. History taking. General examination of the patient. Filling Case-sheet. Common clinical words.	05 Hrs
	2. Hypertension:- Def, Causes, Pathology, Clinical features, Investigation & Management.	03 Hrs
	3. Hypotension :- Def, Causes, Pathology, Clinical features, Investigation & Management.	01 Hr
	4. Diabetes mellitus :- Def, Causes, Pathology, Clinical features, Investigation & Management.	05 Hrs
	5. <u>Diseases of blood</u> :- Anaemia, Basics of coagulation Bleeding disorders & Haemophilia.	20 Hrs
	6. <u>Respiratory Tract</u> :- Pneumonia, Tuberculosis, B. asthma, COPD, Bronchiectasis, Collapse of lung, Pneumonitis, Pleural effusion, Pneumothorax, Empyema thoracis, Cancer lung.	15 Hrs
	7. <u>Diseases of GIT & Liver & GB</u> :-Reflux Oesophagitis, Peptic ulcers, Gastritis, Intestinal Obstruction, Hepatitis, Cirrhosis of liver, Cholecystitis, appendicitis, Hernia, Piles, Fissure, Fistula, Pancreatitis, Pancreatic Cancer.	20 Hrs
	8. <u>Diseases of Nervous system</u> :- Stroke, Meningo-encephalitis, Glasgow coma scale, Epilepsy, Head Injury.	20 Hrs
	9. <u>Diseases of Urinary tract</u> :- Urolithiasis, Benign prostatic hyperplasia, Hydrocoele, Cancer prostate, urethral stricture, Hypo & epi-spadias.	10 Hrs
	10. <u>Endocrine system</u> :- Diabetes mellitus, hypo & Hyper thyroidism.	05 Hrs
	11. <u>Miscellaneous</u> :- Hypo & Hyper Natraemia, Hypo & Hyper Kalaemia, Hypo & Hyper Calcaemia.	05 Hrs
	12. <u>Infections diseases</u> :- TB, Typhoid, Malaria, Dengue fever, Leprosy, AIDS, Amoebiasis.	15 Hrs

**Details of Curriculum for Second Year
Diploma in Lab Technician**

PAPER 1st Theory	Topics	Hours.
1. Only relevant surgical & medical conditions (relevant to Lab technician).	13. Head injury & Intracranial bleed.	10 Hrs
	14. D's of G& O: Caesarian section, fibroid uterus, Cancer uterus, prolapse uterus, PID.	10 Hrs
	15. Basics about fracture & management.	15 Hrs
	16. PIVD, Potts spine.	05 Hrs
	17. Oral cavity tumors.	05 Hrs
	18. Eye d's : Cataract, Glaucoma.	05 Hrs
	19. ENT: CSOM, ASOM, Laryngeal tumor, Nasal polyp, DNS.	06 Hrs

Details of Curriculum for Second Year Diploma in Lab Technician

PAPER 1st Theory	Topics		Hours.
2.Clinical Microbiology- II & Biochemistry- II.	1	Chemistry of Carbohydrate	05 Hrs
	2	Chemistry of Protein	05 Hrs
	3	Chemistry of Lipid	05 Hrs
	4	Radioisotopes & Their Use in Biochemistry	05 Hrs
	5	Principles of Electrophoresis	05 Hrs
	6	Liver Function Test	05 Hrs
	7	Renal Function Test	05 Hrs
	8	Thyroid Function Test	05 Hrs
	9	Body Fluid	10 Hrs
	10	Quality Control	05 Hrs
	11	Standardization	05 Hrs
	12	Ultraviolet and Visible Light Spectroscopy	03 Hrs
	13	Elisa	10 Hrs
	14	Radioimmunoassay	10 Hrs
	15	Polymerase Chain Reaction (PCR)	10 Hrs
	16	Chromatography	10 Hrs
	17	Spectrometry	03 Hrs
	18	Point of Care Testing	03 Hrs
	19	Introduction of Electrolyte & Water Balance	03 Hrs
	20	Clinical Approach of Electrolyte & Water Balance	03 Hrs
	21	Immunochemistry	05 Hrs
	22	Automation in Clinical Biochemistry	10 Hrs
	23	Collection of specimens	03 Hrs
	24	Identification methods for various bacterias	03 Hrs
	25	Methods to prepare Identification medias	03 Hrs
	26	Lab diagnosis of diarrhoea	03 Hrs
	27	Lab diagnosis of UTI	03 Hrs
	28	Lab diagnosis of respiratory tract infection	03 Hrs
	29	Lab diagnosis of meningitis	03 Hrs
	30	Lab Diagnosis of Tuberculosis	05 Hrs
	31	Lab diagnosis of wound infection	03 Hrs
	32	Bacteriological examination of water & air	03 Hrs
	33	Care and handling of lab animals	03 Hrs
	34	Preservation of bacteria	03 Hrs

**Details of Curriculum for Second Year
Diploma in Lab Technician**

PAPER 1st Theory	Topics		Hours.
2.Clinical Microbiology- II & Biochemistry- II.	35	Antigens and Antibodies	05 Hrs
	36	Antigen-Antibody reaction	05 Hrs
	37	Introduction and classification of viruses	05 Hrs
	38	Lab diagnosis of virus including cultivation of viruses	10 Hrs
	39	Medically important DNA viruses including HBV	05 Hrs
	40	Medically important RNA viruses including HIV	05 Hrs
	41	Introduction & classification of fungi	05 Hrs
	42	Lab diagnosis of fungi	03 Hrs
	43	Medically important fungi-I	03 Hrs
	44	Medically important fungi-II	03 Hrs
	45	Preparation of smears for fungus examination	03 Hrs
	46	Media for fungal culture of Fungi	03 Hrs

Details of Curriculum for Second Year Diploma in Lab Technician

PAPER 2nd Theory	Topics		Hours.
1.Histopathology & Cytopathology.	1	Instruments in Histopathology lab – 1. For grossing & for procesing.	15 Hrs
	2	Instruments in Histopathology lab – 2. For section cutting & staining.	15 Hrs
	3	Receiving of sample in Histopathology	10 Hrs
	4	Registration of samples and record keeping	05 Hrs
	5	Preservation of samples in Histopathology.	05 Hrs
	6	Grossing of general pathology specimens.	10 Hrs
	7	Grossing of respiratory system	05 Hrs
	8	Grossing of GIT	05 Hrs
	9	Grossing of Hepatobiliary system	05 Hrs
	10	Grossing of male genital system	05 Hrs
	11	Grossing of female genital system	05 Hrs
	12	Grossing of breast tissue.	05 Hrs
	13	Grossing of Urinary system	05 Hrs
	14	Grossing of Bones	05 Hrs
	15	Grossing of thyroid and and endocrine glands	05 Hrs
	16	Grossing of Brain tissue	05 Hrs
	17	Tissue Blocking and section cutting.	10 Hrs
	18	Reagents in Histopathology.	05 Hrs
	19	Staining of slides in Histopathology I (H & E).	05 Hrs
	20	Staining of slides in Histopathology II (Retic/PAS/VG/Amyloid).	10 Hrs
	21	Paraffin blocks filing.	05 Hrs
	22	Slide filing in Histopathology	05 Hrs
	23	Specimen mounting & Labeling.	10 Hrs
	24	Cataloguing for museum.	10 Hrs
	25	Instruments in Cytopathology laboratory.	20 Hrs
	26	Receiving of samples in Cytopathology	10 Hrs
	27	Preservatives used in Cytopathology	10 Hrs
	28	Staining of slides in cytopathology-1: H & E.	20 Hrs
	29	Staining of slides in cytopathology -2:Pap / gimsa	20 Hrs
	30	Slide Filing of slides in Cytopathology.	10 Hrs

**Details of Curriculum for Second Year
Diploma in Lab Technician**

PAPER 2nd Theory	Topics		Hours.
2. Blood banking & Biomedical waste management.	1	Blood Banking - an introduction.	05 Hrs
	2	Blood Bank setup and Functioning, sterilization & safety.	20 Hrs
	3	Common Blood groups.	10 Hrs
	4	Rare blood groups.	05 Hrs
	5	Genetics & Blood grouping methods.	05 Hrs
	6	Cross matching.	10 Hrs
	7	Preparation of grouping sera.	05 Hrs
	8	Storage of Blood.	10 Hrs
	9	Labeling & Maintenance of blood bags.	05 Hrs
	10	Transportation of Blood bags.	05 Hrs
	11	Preparation of different components of Blood-I	05 Hrs
	12	Preparation of different components of Blood-II	05 Hrs
	13	Immune sera – Types , production & uses .	05 Hrs
	14	Screening tests done in blood bank – Diseases & methods- I	05 Hrs
	15	Screening tests done in blood bank – Diseases & methods- II	05 Hrs
	16	Rh antibody titre.	05 Hrs
	17	Coombs test- Direct & Indirect.	05 Hrs
	18	Blood transfusion reactions.	05 Hrs
	19	Issuing the blood, medico-legal implications.	05 Hrs
	20	Disposal of expired blood.	05 Hrs
	21	Basics of Biomedical waste management	05 Hrs

**Curriculum
for
Practical :- Second Year
Diploma in Lab Technician**

Practical	Topics	
	1	Grossing in General pathology
	2	Grossing of GIT
	3	Grossing of Hepatobiliary system
	4	Grossing of Female genital system
	5	Grossing of Breast tissue.
	6	Grossing of Urinary system
	7	Grossing of Bones
	8	Grossing of Thyroid and endocrine glands
	9	Staining of slides in Histopathology - H & E
	10	Staining of slides in Histopathology - PAS
	11	Staining of slides in Histopathology - AFB
	12	Staining of slides in Histopathology - GIEMSA
	13	Processing in Histopathology I
	14	Processing in Histopathology II
	15	Processing in Histopathology III
	16	Processing in Histopathology IV
	17	Blocking in Histopathology I
	18	Blocking in Histopathology II
	19	Section Cutting in Histopathology I
	20	Section Cutting in Histopathology II
	21	Section Cutting in Histopathology III
	22	Section Cutting in Histopathology IV
	23	Making Stain in Cytopathology I
	24	Making Stain in Cytopathology II
	25	Making Stain in Cytopathology III
	26	Making Stain in Cytopathology IV
	27	Making Stain in Cytopathology V
	28	Staining of slides in Cytopathology- H& E
	29	Staining of slides in Cytopathology - PAP
	30	Staining of slides in Cytopathology - AFB
	31	Staining of slides in Cytopathology - GIEMSA
	32	Blood Grouping And Cross Matching I
	33	Blood Grouping And Cross Matching II
34	Blood Grouping And Cross Matching III	

Curriculum
for
Practical :- Second Year
Diploma in Lab Technician

	Topics	
	Practical	35
36		Rh Antibody II
37		Coomb's Test I
38		Coomb's Test II
39		Component Preparation I
40		Component Preparation II
41		Normal Value
42		Hyper Value & Hypo Value
43		Normal Value
44		Hyper Value & Hypo Value
45		Normal Value
46		Hyper Value & Hypo Value
47		Normal Value
48		Hyper Value & Hypo Value
49		Normal Value
50		Hyper Value & Hypo Value
51		Normal Value
52		Hyper Value & Hypo Value
53		T3 & T4
54		TSH
55		PRL
56		Centrifuge
57		PH Meter
58		Electrophoresis
59		PCR
60		Thin Layer Chromatography (TLC)
61		Urine Sample
62		Sputum
63		Wound swab
64		CSF

Curriculum
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		Topics
Practical	65	Stool
	66	Animal inoculation
	67	Bleeding of mice & rabbit
	68	Collection of sheep blood aseptically
	69	Care and handling of lab animals
	70	Introduction and classification of parasites
	71	Medically important parasites -I
	72	Medically important parasites -II
	73	Procedure/Method of stool examination
	74	Preparation & staining of blood films for haemoparasite
	75	Preparation of blood film for Parasites
	76	Staining (Leishman, Geimsa) & Blood smear examination
	77	Demonstration of P.vivax, P. falciparum & filarial worms
	78	Preparation of stool smears (i) Saline (ii) Concentrated
	79	VDRL test
	80	WIDAL test
	81	Latex agglutination
	82	ELISA Test
83	Staining methods for fungus	
84	Preparation of smears for fungus examination-I	
85	Preparation of smears for fungus examination-II	
86	Preparation of media for culture of fungi	