

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)

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

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 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

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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

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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 & sancity.	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, madico-legal implications.	05 Hrs
	20	Disposal of expired blood.	05 Hrs
	21	Basics of Biomedical waste managment	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
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	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		Wourd swab
64		CSF

Curriculum
for
Practical :- Second Year
Diploma in Lab Technician

		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		