



PM POLYTECHNIC

A Unit of Puran Murti Educational Society
Approved by AICTE, Ministry of HRD, Govt. of India,
Affiliated to State Board of Technical Education, Panchkula, Haryana

SCHEME FOR THIRD SEMESTER (Medical Lab Technology)

Sr. No.	Subject	Study Scheme			EVALUATION SCHEME						Total Marks
					INTERNAL ASSESSMENT		EXTERNAL ASSESSMENT (EXAMINATION)				
					Theory	Practical	Written Paper		Practical		
					Max. Marks	Max. Marks	Max. Marks	Hrs.	Max. Marks	Hrs.	
3.1	Clinical Microbiology-III	3	-	3	25	25	100	3	50	3	200
3.2	Haematology-III	3	-	3	25	25	100	3	50	3	200
3.3	Clinical Biochemistry-III	3	-	3	25	25	100	3	50	3	200
3.4	Histopathology and Cytology-I	3	-	3	25	25	100	3	50	3	200
3.5*	Basics of information technology	-	-	4	-	50	-	-	100	3	150
3.6	Transfusion Medicine(Blood Banking)	3	-	2	25	25	100	3	50	3	200
3.7*	Employability Skills-I	-	-	2	-	25	-	-	50	3	75
	# Student Centered Activities including Enterpreneural Awareness Camp	-	-	5	-	25	-	-	-	-	25
Total		15	-	25	125	225	500	-	400	-	1250

* Common with other diploma programmes

Student Centered Activities will comprise of co-curricular activities like extension lectures, library studies, games, Hobby clubs e.g. photography, painting, singing, seminars, declamation contests, educational field visits, N.C.C.,NSS, Cultural Activities, Civil Defence/Disaster Management activities etc.



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SYLLABUS: Polytechnic (DMLT)

Department: Medical Lab Technology– 3rd Semester

Subject: Histopathology and Cytology- I (Theory)

Subject Code: 121934

Detailed Contents

Unit No.1 Introduction and definition of:

- Topic No.1: Histology
- Topic No.2: Histopathology
- Topic No.3: Biopsy
- Topic No.4: Autopsy
- Topic No.5: Autolysis
- Topic No.6: Putrefaction

Unit No.2 Preparation of Tissue (Different Methods of Preparation of Tissue)

- Topic No.7: Unfixed Tissue preparations, Imprint methods, Impression Smears, Teased preparation, squashed Preparation Frozen section
- Topic No.8 Fixed Tissue preparations (introduction only), Paraffin embedding, Celloidin embedding, Gelatin Embedding

Unit No.3 Reception of Specimen

- Topic No.9: Reception, recording, labeling and preservation of histological specimen

Unit No.4 Fixation (Histological Specimens)

- Topic No.10: Classification of fixatives
- Topic No.11: Composition of various fixatives
- Topic No.12: Advantages and disadvantages

Unit No.5 Processing (by Paraffin Technique)

- Topic No.13: Dehydration
- Topic No.14: Clearing/Dealcoholization
- Topic No.15: Infiltration and impregnation
- Topic No.16: Paraffin embedding
- Topic No.17: Automation: Histokinete (automatic tissue processor) its types, working, care and maintenance

Unit No.6 Microtomy

- Topic No.18: Microtome, Types, Advantages and disadvantages, Working principle, care and maintenance
- Topic No.19: Microtome Knives, Various types of knives, sharpening of knives, Honing technique, Stropping Technique, Automation: Automatic knife sharpener – uses, care and maintenance, Uses of abrasives And lubricants. Introduction to disposable blades - their advantages and disadvantages.
- Topic No.20: Section Cutting, Rough cutting, Fine cutting, Use of tissue floatation bath, Use of various adhesive Media and Lifting of sections to the slide, Errors /cutting faults in sections and their remedies

Unit No.7 Theory of staining (Routine)

- Topic No.21: Principle and mechanism of routine stain (Haematoxylin and Eosin)
- Topic No.22: Various steps of staining (Haematoxylin and Eosin), Deparaffinization, Hydration, Nuclear Staining, Differentiation, Blueing, Counterstaining, Dehydration, Clearing and Mounting, Results
- Topic No.23: Automation: Use of automatic stainer and cover slipper

Unit No.8 Mountants

- Topic No.24: Various types of mounting media (aqueous, resinous)
- Topic No.25: Advantages and Disadvantages

Unit No.9 Various Terms associated with staining

- Topic No.26: Solvents
- Topic No.27: Mordants
- Topic No.28: Metachromasia
- Topic No.29: Accelerators
- Topic No.30: Progressive and regressive staining
- Topic No.31: Use of controls in staining and their significance

Unit No.10 Cell



Topic No.32: Definition and function

Topic No.33: Structure

Topic No.34: Multiplication (Mitosis and Meiosis)

Unit No.11 Exfoliative Cytology

Topic No.35: Introduction

Topic No.36: Preparation of vaginal & cervical smears

Topic No.37: Collection and Processing of specimen for cytology; Urine, Sputum, CSF (Cerebro Spinal Fluid), other fluids

Unit No.12 Fixation (Cytological Specimen)

Topic No.38: Definition

Topic No.39: Various types of Cytological fixatives

Topic No.40: Advantages and Disadvantages

Unit No.13 Cytological Staining

Topic No.41: Principle, Technique and interpretation of results in, Papanicolaou staining, May Grunwald & Giemsa Staining Haematoxylin and Eosin staining

Unit No.14 Laminar airflow and cytotechnician in cytology

Topic No.42: Role of Laminar airflow and cytotechnician in cytology

STUDY SCHEME		EVALUATION SCHEME								Total Marks
		Internal Assessment			External Assessment (Examination)					
Hrs/week			Theory	Practical	Written Paper		Practical			
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs		
3	-	-	25	-	100	3	-	-		125

RECOMMENDED BOOKS

1. An Introduction to Medical Laboratory Technology by FJ Baker; Butterworths Scientific, London
2. Carleton's Histological Technique by RAB, Drury, MADM (OXON), FRC Path, Northwick Paru Hospital, Harrow, Middlesex
3. Theory and Practice of Histological Technique by John D. Bancroft, Churchill Livingstone, London
4. Cellular Pathology Techniques by CFA Culling, Butterworths, London
5. Medical Lab Technology by Dr. Ramnik Sood, MD, Maulana Azad College, New Delhi

SUGGESTED DISTRIBUTION OF MARKS:

Unit No.	Time Allotted (hours)	Marks Allotted (%)
1	01	02
2	02	04
3	01	02
4	06	13
5	06	13
6	07	14
7	05	12
8	02	04
9	04	08
10	02	04
11	04	08
12	02	04
13	04	08
14	02	04
Total	48	100



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Subject: Histopathology and Cytology- I (Practical)

Subject Code: 121934(P)

LIST OF PRACTICALS

1. Reception of specimen, labeling and preserving the specimen
2. Preparation of various smears by unfixed methods
 - Imprint smears
 - Teased smears
 - Squashed smears
3. Preparation of different fixatives with special emphasis on preparation of formaline based fixatives
4. Preparation of paraffin blocks from various tissue pieces and labeling with emphasis on orientation
5. Handling of microtome
6. Sharpening of microtome knives
7. Preparation of blocks for fine cutting
 - Rough cutting
 - Trimming
8. Practice of fine section cutting
9. Practice of lifting of sections on the slides
10. Performing H&E staining on sections and mounting of tissue sections
11. Demonstration of cell using buccal smear/urine sample
12. Processing of urine samples for malignant cells
13. Processing of sputum sample for malignant cytology
14. To perform PAP stain on given smear
15. To perform MGG stain on given smear
16. To perform H&E on given smear
17. To demonstrate various automation by use of brochures, charts etc.

STUDY SCHEME		EVALUATION SCHEME							Total Marks
		Internal Assessment			External Assessment (Examination)				
Hrs/week			Theory	Practical	Written Paper		Practical		
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
-	-	2	-	25	-	-	50	3	75



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Subject: Clinical Biochemistry-III (Theory)

Subject Code: 121933

Detailed Contents

Unit No.1 Serum Bilirubin

- Topic No.1: Formation of bile pigments
- Topic No.2: Formation and excretion of bilirubin
- Topic No.3: Conjugated and unconjugated bilirubin
- Topic No.4: Principle and procedures of serum bilirubin estimation (Direct & Indirect)
- Topic No.5: Reference values
- Topic No.6: Clinical significance

Unit No.2 SGOT and SGPT

- Topic No.7: Principle and procedures of estimation
- Topic No.8: Reference values
- Topic No.9: Clinical significance

Unit No.3 ALP and ACP

- Topic No.10: Principle and procedures of estimation
- Topic No.11: Reference values
- Topic No.12: Clinical significance

Unit No.4 Serum Amylase

- Topic No.13: Principle and procedures of estimation
- Topic No.14: Reference values
- Topic No.15: Clinical significance

Unit No.5 Serum Calcium and Phosphorus

- Topic No.16: Principle and procedures of estimation
- Topic No.17: Reference values
- Topic No.18: Clinical significance

Unit No.6 Lipid Profile

- Topic No.19: Formation of cholesterol
- Topic No.20: High density and low density cholesterol
- Topic No.21: Principles and procedures of estimation
- Topic No.22: Reference value
- Topic No.23: Clinical significance
- Topic No.24: Triglycerides, principle and procedure of estimation
- Topic No.25: Importance of various ratios of HDL, LDL and VLDL

Unit No.7 Urinary Proteins and Creatinine

- Topic No.26: 24 hr. urinary proteins and creatinine estimation
- Topic No.27: Reference values
- Topic No.28: Clinical significance

Unit No.8 Renal Function Tests (Renal clearance Tests)

- Topic No.29: Urea clearance Test
- Topic No.30: Creatinine clearance test
- Topic No.31: Their Clinical significance

STUDY SCHEME			EVALUATION SCHEME						Total Marks
			Internal Assessment		External Assessment (Examination)				
Hrs/week	Theory	Practical	Written Paper		Practical				
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
3	-	-	25	-	100	3	-	-	125

RECOMMENDED BOOKS

1. A Procedure Manual for Routine Diagnostic Tests Vol. I, II and III by KL Mukherjee; Tata McGraw Hill Publishers, New Delhi



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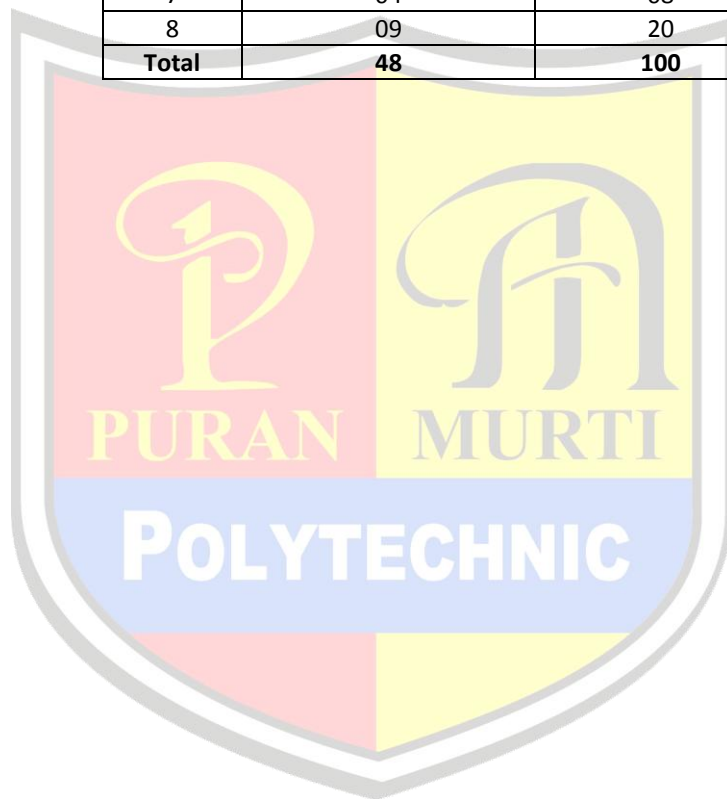
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2. Practical Clinical Biochemistry by H. Varley; Heinmann Publishers, Oxford
3. A Text Book of Medical Laboratory Technology by P Godkar; Bhalani Publishers, Mumbai
4. Medical Laboratory Science, Theory and Practice by J Ochaie and A Kolhatkar, Tata McGraw Hill

SUGGESTED DISTRIBUTION OF MARKS:

Unit No.	Time Allotted (hours)	Marks Allotted (%)
1	06	12
2	06	12
3	06	12
4	03	06
5	04	08
6	10	22
7	04	08
8	09	20
Total	48	100





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Subject: Clinical Biochemistry-III (Practical)

Subject Code: 121933 (P)

LIST OF PRACTICALS

1. Serum bilirubin estimation
2. Phosphorus estimation
3. Calcium estimation
4. Renal clearance tests
5. SGOT estimation
6. SGPT estimation
7. ALP estimation
8. ACP estimate
9. Total cholesterol estimation
10. Triglyceride estimation
11. Estimation of HDL and calculation of VLDL and LDL
12. Urinary protein and creatinine estimation (24 hr)
13. Estimation of serum amylase

STUDY SCHEME	EVALUATION SCHEME								Total Marks
	Internal Assessment			External Assessment (Examination)					
	Theory		Practical	Written Paper		Practical			
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
-	-	2	-	25	-	-	50	3	75



Detailed Contents

Unit No.1 Erythrocyte sedimentation rate (ESR) and packed cell volume (PCV)

Topic No.1: Introduction

Topic No.2: Various methods of estimation of ESR and PCV and their merits and demerits

Topic No.3: Factors involved in ESR

Topic No.4: Interpretation of results

Unit No.2 Red Cell Indices – MCV, MCH, MCHC

Topic No.5: Definition, reference range, calculation and interpretation

Unit No.3 Supravital stain and reticulocyte counting

Topic No.6: Introduction

Topic No.7: Principle and procedure of staining and calculation

Topic No.8: Reference values and interpretation

Topic No.9: Variation in Physiological Values such as Hb, PCV, T.L.C. and Platelet count

Unit No.4 Anemias

Topic No.10: Definition and classification

Topic No.11: Laboratory diagnosis of: (a) Iron deficiency anaemia (b) Megaloblastic anaemia, (c) Haemolytic anaemias including sickle cell anaemia thalassaemia (d) Aplastic anaemia

Unit No.5 Red cell fragility test

Topic No.12: Principle and procedure

Topic No.13: Clinical significance

STUDY SCHEME		EVALUATION SCHEME							Total Marks
		Internal Assessment			External Assessment (Examination)				
Hrs/week		Theory	Practical	Written Paper		Practical			
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks		Hrs
3	-	-	25	-	100	3	-	-	125

RECOMMENDED BOOKS

1. Medical Laboratory Technology Vol. 1 by KL Mukherjee; Tata McGraw Hill Publishing Company, New Delhi.
2. An Introduction to Medical Laboratory Technology by FJ Baker; Butterworths Heinemann, Oxford
3. Medical Laboratory Manual for Tropical Countries by Monica Cheesbrough; Cambridge University Press; UK
4. Textbook of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House, Mumbai
5. Practical Haematology by J.V Decie; ELBS with Churchill Living Stone, UK
6. Medical Laboratory Science Theory and Practical by J. Ochei and Kolhatkar; Tata McGraw Hill Publishing Company Ltd., New Delhi

SUGGESTED DISTRIBUTION OF MARKS:

Unit No.	Time Allotted (hours)	Marks Allotted (%)
1	12	30
2	05	08
3	07	15
4	16	35
5	08	12
Total	48	100



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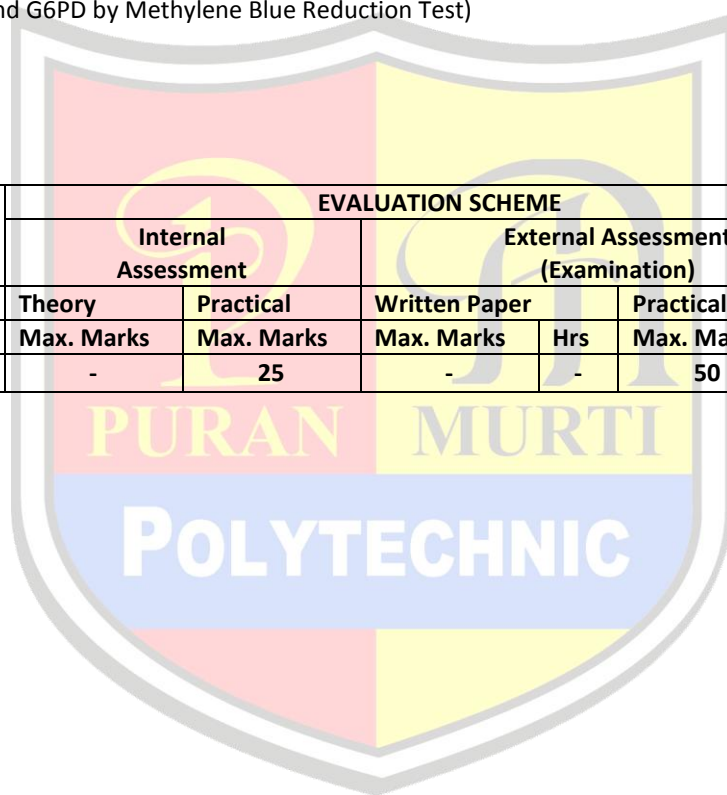
Subject: Haematology - III (Practical)

Subject Code: 121932(P)

LIST OF PRACTICALS

1. ESR estimations (wintrobe and westergren) in blood sample
2. Determination of PCV (wintrobe and capillary) in blood by Macro and Micro Methods
3. Counting of Reticulocyte in blood
4. To perform red cell fragility test on blood
5. To perform Sickling test on blood
6. Estimation of foetal haemoglobin by alkali denaturation test
7. Estimation of plasma haemoglobin
8. Estimation of and G6PD by Methylene Blue Reduction Test)

STUDY SCHEME		EVALUATION SCHEME							Total Marks
		Internal Assessment			External Assessment (Examination)				
Hrs/week			Theory	Practical	Written Paper		Practical		
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
-	-	2	-	25	-	-	50	3	75





Detailed Contents

Unit No.1 Introduction

Topic No.1: Introduction to medical parasitology

Unit No.2 General Characteristics, morphology, classification

Topic No.2: Protozoa

Topic No.3: Helminthes

Unit No.3 Laboratory Samples for detection of parasites

Topic No.4: Collection, transportation, processing and preservation of samples for routine investigations – Blood, stool

Unit No.4 Concentration techniques

Topic No.5: Principle and application of concentration techniques of stool for demonstration of ova and cysts

Unit No.5 Giardia and Entamoeba histolytica

Topic No.6: Morphology

Topic No.7: Life cycle

Topic No.8: Lab diagnosis

Unit No.6 Ancylostoma and Ascaris lumbricoides

Topic No.9: Morphology

Topic No.10: Life cycle

Topic No.11: Lab diagnosis

Unit No.7 T solium, T saginata

Topic No.12: Morphology

Topic No.13: Life cycle

Topic No.14: Lab diagnosis

Unit No.8 Malarial Parasite (P. Vivax and P. Falciparum)

Topic No.15: Morphology

Topic No.16: Life cycle

Topic No.17: Lab diagnosis

Unit No.9 Virology

Topic No.18: Introduction

Topic No.19: General Characteristics, Classification Structure of viruses.

Unit No.10 Medically important viruses

Topic No.20: Pathogenicity, Lab diagnosis and prevention of

Topic No.21: Rabies

Topic No.22: Polio

Topic No.23: HIV

Topic No.24: HBV (Hepatitis 'B' virus)

Unit No.11 Virological Samples

Topic No.25: Collection

Topic No.26: Transportation

Topic No.27: Storage

STUDY SCHEME			EVALUATION SCHEME						Total Marks
			Internal Assessment		External Assessment (Examination)				
Hrs/week	Theory	Practical	Written Paper		Practical				
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
3	-	-	25	-	100	3	-	-	125

RECOMMENDED BOOKS

1. Parasitology by KD Chatterjee; Chatterjee Medical Publishers, Kolkatta
2. Medical Parasitology by Arora & Arora
3. An introduction to Medical Laboratory Technology by FJ Baker; Butterworth Heinemann Oxford



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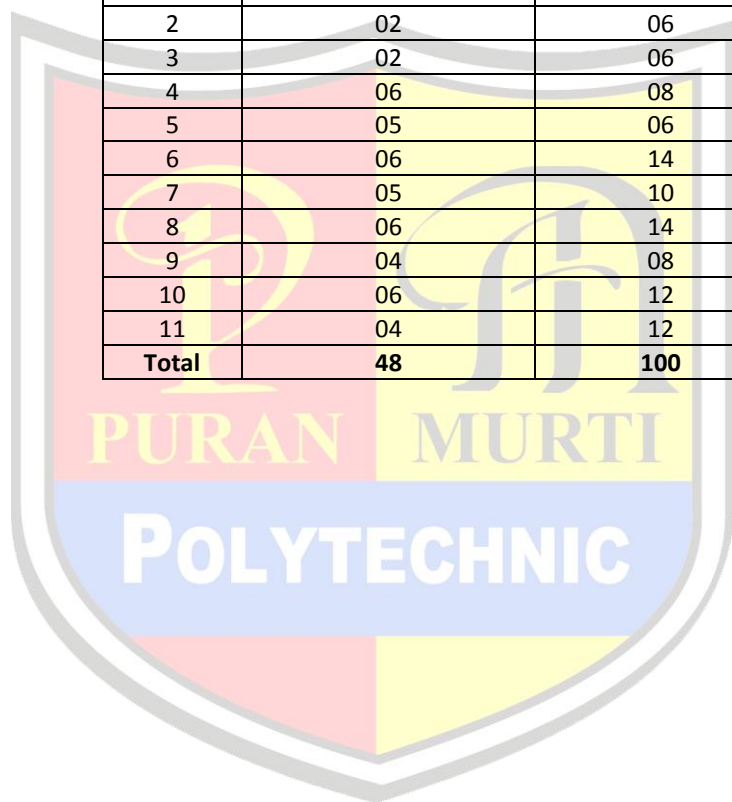
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4. Text Book of Medical Microbiology by Satish Gupta; JP Brothers, New Delhi
5. Textbook of Microbiology by Ananthanarayan and Panikar; Orient Longman, Hyderabad
6. Text Book of Medical Laboratory Technology by Praful B Godkar; Bhalani Publishing House; Mumbai
7. Medical Laboratory Manual for Tropical Countries Vol. I and II by Monica Cheesbrough; Cambridge University Press; UK
8. Practical Book of Medical Microbiology by Satish Gupta; JP Brothers, New Delhi
9. Medical Laboratory Science Theory and Practice by J Ochei and A Kolhatkar
10. Medical Laboratory Science by J. Achie and Kolhatkar, Tata McGraw Hill
11. Medical Laboratory Technology by Kanai Lal Mukherjee; Tata McGraw Hill Publishers, New Delhi

SUGGESTED DISTRIBUTION OF MARKS:

Unit No.	Time Allotted (hours)	Marks Allotted (%)
1	02	04
2	02	06
3	02	06
4	06	08
5	05	06
6	06	14
7	05	10
8	06	14
9	04	08
10	06	12
11	04	12
Total	48	100





Subject: Clinical Microbiology (Practical)

Subject Code: 121931(P)

LIST OF PRACTICALS

1. Collection and routine stool examination for detection of intestinal parasites
 - Saline preparation
 - Lugol's Iodine preparation
 - Concentration methods
 - a) Floatation method (saturated salt solution/zinc sulphate)
 - b) Sedimentation method (formal ether)
2. Identification of following adult worms/cyst from preserved specimen/slides
 - Tapeworm
 - Roundworm
 - Hookworm
 - Giardia
 - Entamoeba . histolytica, E. coli
3. Preparation of smear and identification of blood parasites
 - Preparation of stains (Leishman, Giemsa, Field)
 - Preparation of thin and thick smears
 - Staining of smears by Leishman, Giemsa, Field
 - Examination of smears for malarial parasite (P. vivax and P. falciparum)
 - Demonstration of various stages of malarial parasite from stained slides

STUDY SCHEME		EVALUATION SCHEME							Total Marks
		Internal Assessment			External Assessment (Examination)				
Hrs/week			Theory	Practical	Written Paper		Practical		
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
-	-	2	-	25	-	-	50	3	75



Detailed Contents

Unit No.1 Introduction

Topic No.1: Historical introduction to Transfusion medicine (blood banking)

Unit No.2 Antigen and Antibody

Topic No.2: Definition of antigen and antibody

Topic No.3: Classification of antigens and antibodies.

Unit No.3 ABO Blood Group System

Topic No.4: Antigens and antibodies involved

Topic No.5: Principle and procedure of ABO blood grouping

Topic No.6: Various blood sub groups (A1, A2, A1B, A2B)

Unit No.4 The Rh Blood Group System

Topic No.7: Antigen and antibody involved

Topic No.8: Principle and procedure of Rh grouping

Topic No.9: Variant of D antigen (Du)

Unit No.5 Anticoagulants used in blood bank

Topic No.10: Types and composition of various anticoagulants

Topic No.11: Advantages and disadvantages of various anticoagulants

Unit No.6 Criteria for selection

Topic No.12: Criteria for selection of Donor

Unit No.7 Blood Collection and storage

Topic No.13: Screening of blood donor and characteristics of ideal blood donor

Topic No.14: Blood collection procedure

Topic No.15: Transportation and storage

Unit No.8 Screening of blood donors for:

Topic No.16: MP

Topic No.17: VDRL

Topic No.18: HIV

Topic No.19: HbsAg

Topic No.20: HCV

Unit No.9 Cross Matching

Topic No.21: Types of cross matching

Topic No.22: Various methods and their procedures

Unit No.10 Coombs Test

Topic No.23: Direct coombs test (principle, procedure, importance and application)

Topic No.24: Indirect coombs test (principle, procedure, importance and application)

Unit No.11 Various blood components (Packed cells, Fresh frozen plasma, Cryoprecipitate, PRP (Platelet rich plasma))

Topic No.25: Preparation

Topic No.26: Preservation

Topic No.27: Uses

Unit No.12 Transfusion Reactions

Topic No.28: Blood Transfusion reactions

STUDY SCHEME			EVALUATION SCHEME						Total Marks
			Internal Assessment			External Assessment (Examination)			
Hrs/week			Theory	Practical	Written Paper		Practical		
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
3	-	-	25	-	100	3	-	-	125

RECOMMENDED BOOKS

1. Introduction to Modern Lab Technology by FJ Baker, Butterworth, Heinemann Publishers Oxford



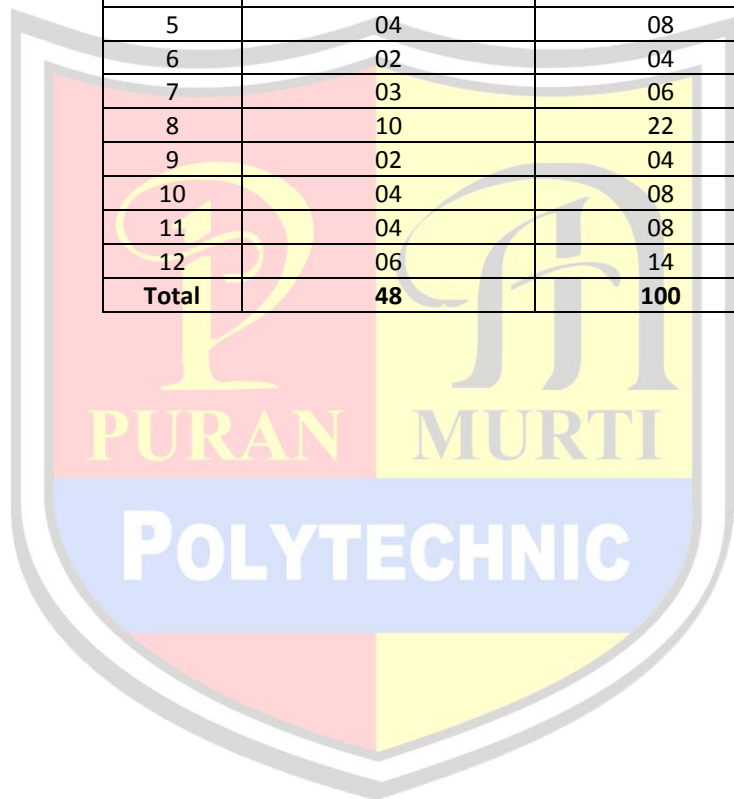
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2. Text book of Modern Lab Technology by Praful and Godker, Bhalani Publisher, Mumbai
3. Modern Lab Technology – A Procedure Manual for Routine Diagnostic Test by Kanai L. Mukerjee, Volume 1, Tata McGraw Hill Publishing, New Delhi
4. Modern Blood Banking and Transfusion Practices by Denise M Harmering, Jay Pee Brothers, New Delhi

SUGGESTED DISTRIBUTION OF MARKS:

Unit No.	Time Allotted (hours)	Marks Allotted (%)
1	02	04
2	03	06
3	04	08
4	04	08
5	04	08
6	02	04
7	03	06
8	10	22
9	02	04
10	04	08
11	04	08
12	06	14
Total	48	100





Subject: Transfusion Medicine (Practical)

Subject Code: 121935(P)

LIST OF PRACTICALS

1. Performing ABO blood grouping by following method:
 - Direct
 - Tube Test
 - Indirect (reverse)
 - Subgroup
2. Performing-Rh grouping by following techniques:
 - Slide
 - Tube technique
3. Performance of Coombs Test
 - Direct
 - Indirect
4. Cross Matching (compatibility testing)
 - Major
 - Minor
5. Preparation of anticoagulants
 - ACD (Acid Citrate Dextrose)
 - CPD (Citrate Phosphate Dextrose)
 - CPDA (Citrate Phosphate Dextrose Adenine)
6. Malarial Parasite test by Thick and Thin smear preparation
7. VDRL Test
8. HIV Test
9. HbsAg Test
10. HCV Test
11. Preparation of platelet rich plasma and platelet poor plasma

STUDY SCHEME		EVALUATION SCHEME							Total Marks
		Internal Assessment			External Assessment (Examination)				
Hrs/week			Theory	Practical	Written Paper		Practical		
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
-	-	2	-	25	-	-	50	3	75



Detailed Contents

TOPICS TO BE EXPLAINED THROUGH DEMONSTRATION

1. Information Technology – its concept and scope, applications of IT, ethics and future with information technology
2. Impact of computer and IT in society. -- Computer application in office, book publishing, data analysis, accounting investment, inventory control, graphics, air and railway ticket reservation, robotics, military, banks, Insurance financial transactions and many more
3. Generations of computer, block diagram of a computer, CPU, memory, data – numeric data, alpha numeric data, processing of data.
4. Computers for information storage, information seeking, information processing and information transmission, computer organization, computer hardware and software; primary and secondary memory: RAM, ROM, PROM etc. Input devices; keyboard, mouse, scanner, etc ; output devices ; VDU and Printer(Impact and non-Impact printers), Plotter etc. Primary and Secondary Storage (Auxiliary Storage), Secondary storage;magnetic disks – tracks and sectors, optical disk (CD, CD-RW and DVD Memory)
5. Introduction to Operating Systems such as MS-DOS and Windows, difference between DOS and Windows
6. Basics of Networking – LAN, MAN,WAN

LIST OF PRACTICALS

1. Identify and list functions of various components and peripherals of given computer.
2. Installation of operating system viz. * Windows XP, *Windows 2007 etc.
3. Installing a computer system by giving connection and loading the system software and application software and various sources to install software
4. Exercises on entering text and data (Typing Practice)
5. Features of Windows as an operating system:
 - a) Start , shutdown and restore
 - b) Creating and operating on the icons
 - c) Opening, closing and resizing the windows
 - d) Using elementary job commands like – creating, saving, modifying, renaming, finding and deleting a file , creating and operating on a folder
 - e) Introduction to all properties such as changing settings like, date, time, calculator, colour (back ground and fore ground)
 - f) Using short cuts
6. Word Processing (MS Office/Open Office)
 - a) File Management:Opening, creating and saving a document, locating files, copying contents in some different file(s)
 - b) Editing a document: Entering text, cut, copy, paste using toolbars,Use of spell check, PDF file and its conversion in different file formats (MS Word/Excel etc.),Scanning, editing and printing of a document
 - c) Formatting a document:Using different fonts, changing font size and colour, changing the appearance through bold/ italic/ underlined, highlighting a text, changing case, using subscript and superscript, using different underline methods,Aligning of text in a document, justification of document ,Inserting bullets and numbering,Formatting paragraph, inserting page breaks and column breaks, line spacing, Use of headers, footers, inserting footnote, end note, use of comments, Inserting date, time, special symbols, importing graphic images, drawing tools
 - d) Tables and Borders:Creating a table, formatting cells, use of different border styles, shading in tables,merging of cells, partition of cells, inserting and deleting a row in a table,How to change docx file to doc file, Print preview, zoom, page set up, printing options,Using Find, Replace options
7. Spread Sheet Processing (MS Office/Open Office)
 - a) Starting Excel:open worksheet, enter, edit data, formulae to calculate values, format data, create chart, printing chart, save worksheet, switching between different spread sheets
 - b) Menu commands:Create, format charts, organize, manage data, solving problem by analyzing



- data,creating graphs
- c) Work books: Managing workbooks (create, open, close, save, rename), working in work books, Editing a worksheet: copying, moving cells, pasting, inserting, deleting cells,rows, columns, find and replace text, numbers of cells, formatting worksheet
 - d) Creating a chart: Working with chart types, changing data in chart, formatting a chart, use chart to analyze data, Using a list to organize data, sorting and filtering data in list
 - e) Formulas: Addition, subtraction, division, multiplication, percentage and auto sum
8. Power Point Presentation (MS Office/Open Office)
- a) Introduction to PowerPoint: How to start PowerPoint,Working environment: concept of toolbars, slide layout, templates etc,Opening a new/existing presentation,Different views for viewing slides in a presentation: normal, slide sorter etc.
 - b) Addition, deletion and saving of slides
 - c) Insertion of multimedia elements, Adding text boxes, importing pictures, tables and charts etc.
 - d) Formatting slides:Text formatting, changing slide layout, changing slide colour scheme,Changing background, Applying design template
 - e) How to view the slide show? Viewing the presentation using slide navigator, Slide transition, Animation effects etc.
9. Antivirus
- a) What is virus and its types
 - b) Problems due to virus
 - c) Installation and updation of antivirus (anyone out of Kaspersky, McAfee, Norton,Quickheal etc).
 - d) How to scan and remove the virus
10. Internet and its Application
- a) Log-in to internet, introduction to search engine Browsing and down loading of information from internet
 - b) Creating e-Mail Account, Log in to e-mail account and Log out from e-mail account
 - c) Managing e-Mail, Creating a message, Sending, receiving and forwarding a message, Attaching a file, Deleting a message

STUDY SCHEME			EVALUATION SCHEME						Total Marks
			Internal Assessment			External Assessment (Examination)			
Hrs/week			Theory	Practical	Written Paper		Practical		
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
-	-	4	-	50	-	-	100	3	150

TEXT BOOKS:

1. Fundamentals of Computer by E Balagurusamy,Tata McGraw Hill Education Pvt. Ltd, New Delhi
2. Fundamentals of Computer by V Rajaraman; Prentice Hall of India Pvt. Ltd., New Delhi
3. Fundamentals of Computer by Sumita Arora by Dhanpat Rai and Co, New Delhi

REFERENCE BOOKS:

1. Computers Today by SK Basandara, Galgotia Publication Pvt Ltd. Daryaganj, New Delhi.
2. Internet for Every One by Alexis Leon and Mathews Leon; Vikas Publishing House Pvt. Ltd., Jungpura, New Delhi
3. A First Course in Computer by Sanjay Saxena; Vikas Publishing House Pvt. Ltd., Jungpura, New Delhi



Subject: Employability Skills – I (Practical)

Subject Code: Emp. Skill (P)

Detailed Contents

Unit 1. Writing skills

- Topic No.1: Official and business correspondence
- Topic No.2: Job application - covering letter and resume
- Topic No.3: Report writing - key features and kinds

Unit 2 Oral Communication Skills

- Topic No.4: Giving advice
- Topic No.5: Making comparisons
- Topic No.6: Agreeing and disagreeing
- Topic No.7: Taking turns in conversation
- Topic No.8: Fixing and cancelling appointments

Unit 3 Generic Skills

- Topic No.9: Stress management
- Topic No.10: Time management
- Topic No.11: Negotiations and conflict resolution
- Topic No.12: Team work and leadership qualities

STUDY SCHEME			EVALUATION SCHEME						Total Marks
			Internal Assessment		External Assessment (Examination)				
Hrs/week			Theory	Practical	Written Paper		Practical		
L	T	P	Max. Marks	Max. Marks	Max. Marks	Hrs	Max. Marks	Hrs	
-	-	2	-	25	-	-	50	3	75