VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

REVISED SYLLABUS FOR DIPLOMA OF MEDICAL TECHNOLOGY (EFFECTIVE FROM JULY-2014)

Paper II: CLINICAL PATHOLOGY AND PARASITOLOGY

SECTION – I CLINICAL PATHOLOGY

1. URINE ANALYSIS:

i)Anatomy and Physiology of Urine formation.
ii)Composition of Urine.
iii)Collection, Preservation & Transportation of Urine.
iv)Routine Examination Physical, Chemical & Microscopic.
v)Correlation of urinary findings in various diseases.
vi)Pregnancy Test

2. STOOL ANALYSIS:

i)Collection, Preservation & Transportation of Stool.
ii)Routine Examination Physical, Chemical & Microscopic.
iii)Correlation and significance in various diseases.

3. CEREBROSPINAL FLUID:

i)Formation of C.S.F.
ii)Collection, Preservation & Transportation of C.S.F.
iii)Composition of CSF.
iv)Physical, Chemical & Microscopic Examination.
v)Correlation of Abnormal C.S.F. findings in various diseases.

4. SPUTUM ANALYSIS:

i)Anatomy and Physiology of Respiratory system.
ii)Collection, Preservation & Transportation of sputum.
iii)Physical, Microscopic & Bacteriological Examination.

5. EXAMINATION OF BODY FLUID:

a.Transudate & Exudate
b.Indications, Collection and Examination-Physical, Chemical & Microscopic of following body Fluids
i)Pleural,
ii)Peritoneal,
iii)Pericardial
iv)Synovial fluid.

6. HISTOPATHOLOGY TECHNIQUES:

a. Routine& Special stains, Museum- Technique & Specimen preservation
b.Tissue Processing and Staining
i)Micro tomes-types, Tissues processing technique cry tome
ii)Fixative cleaning agents
iii)Automation in Histopathology- Tissue processors cryotome
iv)Sample preparation- glossing techniques

v)H & E stain, special stains & FNAC, Cytopathology Technique, staining methods.

7. SEMEN ANALYSIS:

(1) Anatomy & Physiology of Male Reproductive System.
(2) Formation of semen.
(3) Collection
(4) Physical, Chemical & Microscopic Examination as per WHO Recommandation.
(5) Medico – legal significance of Semen examination.

8. GASTRIC ANALYSIS:

(1) Anatomy and Physiology of Stomach.
(2) Collection, Preservation, Transportation & analysis.
(3) Significance and diagnostic importance of Gastric secretions in various clinical conditions.

SECTION – II PARASITOLOGY

1) INTRODUCTION OF CLINICAL PARASITOLOGY:

An elementary study of the types of animal associations, parasitism, commensalism and Symbiosis. Types of parasites, sources of infection,Classification of protozoa & Helminthes.

2) PROTOZOA:

Introduction, classification & study of individual Protozoa
(i) Entamoeba histolytica
(ii) Giardia lamblia
(iii) Leishmania donovani
(iv) Plasmodia its different species
(v) Toxoplasma gondii.
(vi) Trypenosoma.
(vii)Trichomonas

3) CESTODES:

Introduction, classification & study of individual Cestodes.
(i) Taenia saginata.
(ii) Taenia solium.
(iii) Echinococcus granulosus.

4) TREMATODES:

Introduction ,classification & study of individual Trematodes
(i)Schistosoma haematobium,
(ii)Schistosoma mansoni
(iii)Schistosoma japonicum.

5) NEMATODES:

Introduction , classification & study of individual Nematodes.
(i) Intestinal Nematodes:
Ascaris lumbricoides, Ancylostoma deodenale, Necator americans, Strongiloides stercoralis, Trichnella spiralis, Trichuris trichuria, Enterobius vermicularis.
(ii) Somatic Nematodes:
Wuchereria bancrofti, Wuchereria malayi, Dracunculus medinensis.

REFERENCE BOOKS:

01 Text Book of Medical Laboratory Technology, P.B.Godkar, 1994, Bhalani Publishing House,Mumbai

02. Medical Laboratory Technology,Vol I & II, 1999, K.L.Mukharjee.Tata MacGraw Hill.

03. Medical Laboratory Technology, Ramnik Sood, 4th ed., 1994,Jaypee Brothers.

04. A Hand Book Of Clinical Pathology , Chakraborthy & Battacharya, Academic Publisher.

05. Parasitology, K.D.Chatterjee, Chatterjee Medicasl Publisher.

06. Clinical Diagnosis and management by laboratory methods 20th Edition John Bernard Henry Saunders 2005.

07. Medical Parasitology 2nd edition, D.R.Arora, B.Arora, CBS Pub.& Distributer.

08. Text book Of Medical Parasitology, P. Chakraborty, New Central book Agency.

09. District laboratory practice in tropical countries VOL-2, Monica Cheesbrough, Cambridge University Press.

10. Concise Clinical pathology, Ila M. Vora, Pradeep Vaideeswar, Bhalani publishing House, Mumbai, India.

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

REVISED SYLLABUS FOR DIPLOMA OF MEDICAL TECHNOLOGY (EFFECTIVE FROM JULY-2014)

Paper III: HAEMATOLOGY AND BLOOD BANKING

SECTION –I HAEMATOLOGY

1) PHYSIOLOGY OF BLOOD

(i) Normal Erythropoesis.
(ii) Leucopoesis.
(iii) Formation & Function of Blood Platelets.

2) A. INTRODUCTION

(i) Collection of Blood samples for Haematological studies.
(ii) Types of Anticoagulants.
(iii) Capillary Blood, Venous blood & Storage of Samples.

B. HAEMATOLOGICAL TEST

(i) Hemoglobin and its estimation.
(ii) Red blood cell, White blood cell count, Platelet count-counting fluids preparation, Function.
(iii) Study of Peripheral smear, Differential WBC count, Morphology of red Blood Cells,
(iv) Romanowasky stains, Staining procedures, preparation of Stains, Artifacts & troubleshooting.
(v) Haematocrit (PCV)
(vi) Absolute Blood Indices.RDW, PDW, PCT.

5. Lynch's medical Laboratory Technology,3rd ed., Stanley S. Raphael, W.B.saynders Company, Asian Edition.
6. Practical Medical Microbiology. Collee, Duguid, fraser, Marmlom,24thed.,Churchill Livingstone.
7. Laboratory Exercises in Microbiology, 2nd ed., Michael J. Pelczer,Macgraw Hill Book Company.
8. A Hand book of Practical Immunology. G.P.Talwar, Vikas Publishing House Pvt. Ltd.

9. Collection and Handling of Laboratory Specimen – A Practical guide,1983,Editor T.M.Slockbower and T.A. Bhumenfeld,L.B.Lippincott Company,USA.

10. Crown & Steel's Mannual for the Identification of medical Bacteria.3rd Ed, Edited by G.I. Barrow and R.K.A. Felthan, Pub. Cambridge University Press.

PRACTICALS BASED ON PAPER – II

SECTION – 1 CLINICAL PATHOLOGY

1. Urine Analysis: Physical, Chemical, Microscopic examination.
2. Stool Analysis: Physical, Chemical, Microscopic examination.
3. Cerebrospinal Fluid: Physical, Chemical, Microscopic examination.
4. Sputum examination: Physical, Microscopic
5. Gastric Analysis: Chemical examination of gastric juice.
6. Semen examination: Physical, Chemical, Microscopic examination.
7. Body fluids (each separately): Physical, Chemical, Microscopic examination.
8. Cutting, Fixation and processing of tissues (Demonstration).
Staining – (i) Haematoxylin and Eosin for paraffin sections.
(ii) PAP Stain for cytology.

SECTION – 1I PARASITOLOGY

1. Test for malarial parasite: 1.Thin smear, Thick smear
2. ICT

2. Test for Filarial parasite: (slide)

3. Dehaemoglobinization techniques for Malaria & Filaria.

REFERENCE BOOK:

1. Medical Laboratory Technology, 5th reprint 1999, Vol. I, II & III, K.L.Mukharjee.Tata McGraw Hill.

2. Text Book of Medical Laboratory Technology P.B.Godkar, 1994,Bhalani Publishing House,Mumbai.

3. Medical Laboratory Technology, Ramnik Sood,4th ed., 1994,Jaypee Brothers.

4. Hand Book of Medical Laboratory Technology, Bharucha, Meyerm, Mody, Carman.

5. Lynch's Medical Laboratory Technology, 3rd ed., Stanley S.Raphael,W.B.Saunders Company, Asian edition.

6. A Hand Book of Clinical Pathology,Chakraborthy & Bhattacharya, Academic Publishers.

7. Parasitology, K.D.Chatterjee,Cheterjee Medical publishers.

8. Collection and Handling of Laboratory Specimens – A Practical Guide, 1988 Editor T.M.Slockbower & T.A.Bhumenfeld, J.B.Lippincott Company,USA.

9. Basic laboratory Method in Medical Parasitology, WHO, 1991.

PRACTICAL BASED ON PAPER III

SECTION – 1 HAEMATOLOGY

1. Methods of Blood Collection and Anticoagulants
2. Haemoglobin estimation: Sahli's method and Cyanmethaemoglobin method.
3. Total R.B.C.
4. Total W.B.C. Count.
5. Differential Count.
6. Platelet Count.
7. Reticulocyte Count
8. E.S.R.
9. Packed cell volume/ Determination of Haematocrit.
10. Bleeding time, Whole Blood Coagulation time and Prothrombin time.
11. Osmotic fragility test (Demonstration).
12. Preparation of various stains & reagents for hematology test
13. Sickling test.
14. Immature cells of leukemia (Demonstration).
15. Interpretation of Automated strips in various clinical condition.

SECTION – 1I BLOOD BANKING.

1. ABO cell grouping and serum grouping by slide and tube method.
2. Rh typing – Various Techniques.
3. Anti A/ Anti B titer
4. Anti D titration by albumin and indirect antiglobulin technique
5. Test for HBsAg (Hepatitis B surface Antigen) ELISA and Rapid Test (Demonstration).
6. Test for HIV Antibodies (ELISA and Rapid Test) (Demonstration).
7. (a) Cross matching procedures.
   (b) Direct Antiglobulin (Coomb's) Test.
   (c) Indirect antiglobulin test.

REFERENCE BOOKS:

1. Medical Laboratory Technology,5th reprint 1999,Vol.I,II & III, K.L.Mukharjee, TataMcGraw Hill

2. Text book of Medical Laboratory Technology, P.B.Godkar, 1994,Bhalani Publishing House, Mumbai.

3. Medical Laboratory Technology, Ramnik Sood, 4th ed., 1994,Jaypee Brothers.

4. Hand book of Medical Laboratory Technology, Bharucha, Meyerm, Mody, Carman.

5. Lynch's Medical Laboratory Technology, 3rd ed., Stanley S. Raphael, W. B. Saunders Company, Asian edition.