

DIPLOMA IN CLINICAL PATHOLOGY

SYLLABUS

Preamble

The purpose of this programme is to standardize Pathology (teaching at Post Graduate level) through out KERALA, that will benefit in achieving uniformity in undergraduate teaching as well and create suitable manpower with appropriate expertise in Pathology

Programme Objectives

A candidate appearing and qualifying in the diploma in clinical Pathology exam should be able to

- 1) Attain proficiency in both theoretical and practical aspects of the Disciplines of biochemistry, pathology and microbiology.
- 2) They are expected to be able to conduct diagnostic procedures, interpret and offer an opinion/recommendation where required independently in routine lab setting
- 3) They must be able to oversee the technical staff and ensure that recommended procedures are followed in collection of samples, registering, processing, reading and interpreting diagnostic tests performed.

Specific Learning Objectives

At the end of the course of DCP the student shall be able to Diagnose/interpret/perform the following

1. Clinical chemistry tests
2. Basic microbiology tests
3. Routine tests of blood and all body fluids
4. Peripheral smear and bone marrow
5. Cytopathology specimens
6. Basic surgical pathology specimens (like endometrial curetting)including describing and grossing of specimens
7. Blood banking techniques

Should have basic knowledge of

1. Good laboratory practice and SOP's
2. Quality control
3. Universal precautions and biosafety
4. Equipment care

5. Biowaste and lab waste disposal
6. Organisation of a laboratory
7. Teaching methodology for taking classes for undergraduates (MBBS), paramedics, nursing etc.

Should be able to function as a part of a team, interact well with the patient and the clinicians, adopt ethical principles and to respect the rights of the patient including the right to information and second opinion.

Post Graduate Training

Based on the available facilities, department can prepare a list of postgraduate experiment pertaining to basic and applied Pathology. Active learning should form the mainstay postgraduate training there should be lectures for postgraduates (at least 20 per year) along with seminars, symposia, group-discussions, journal clubs Each college should have a medical education unit to conduct PG orientation programmes. The two year training programme for the Diploma in Clinical Pathology may be arranged in the form of postings to different assignments/laboratories for specified periods as outlined below. The period of such assignments/postings is recommended for 22 months. Posting schedules may be modified depending on needs, feasibility and exigence
Postings: Total duration – 22 Months.

- | | | |
|-----------------------|---|------------|
| • Histopathology | - | 4 months |
| • Cytopathology | - | 4 months |
| • Hematology and - | } | - 6 months |
| • Clinical laboratory | | |
| • Blood bank | - | 2months |
| • Microbiology | - | 3 months |
| • Biochemistry | - | 3 months |

The students will have regular scientific discussions during these postings in the form of

- Subject seminars including techniques
- Specimen discussion
- Slide seminars, Topic presentation
- Periodical tests
- Journal Club

Post Graduate Examination:-

The Post Graduate examination shall be in two parts:-

1. Theory : There shall be three theory papers with sections A and B
Paper I : General Pathology and Systematic Pathology
Paper II : Haematology, Clinical Pathology and Cytology
Paper III : Clinical Biochemistry and Basic Microbiology

There shall be 4 examiners.

- 2 internal examiners-one from Pathology and one from Microbiology/Biochemistry alternatively
- 2 external examiners-one from Pathology and one from Microbiology/Biochemistry alternatively

Paper 1 and 2 will be evaluated by Pathologists and Paper 3 by Microbiologist (section A) and Biochemistry (section B)

Practicals

Exam will be conducted in 3 days

Day 1

- Microbiology Exercises –FN
- Clinical pathology case examination/discussion-AN
- Hematology exercise and Urine Analysis
- Gross specimen spotting and discussion

Day 2

- Reporting on Microbiology exercise-FN
- Histopathology Techniques-FN
- Section cutting
- Hematoxylin – Eosin stain, Special stain
- Cytology staining

- Slide spotting-AN
- Histopathology slides – 5
- Cytology slides – 5

- Hematology slides – 5

Day 3

- Biochemistry exercises

Marks for exam grand total=600(theory=300+ practical=200+viva=100)

Microbiology	theory=50	practical=50	viva=30	total=130
Biochemistry	theory=50	practical=50	viva=30	total=130
Pathology	theory=200	practical=100	viva=40	total=340
Practical	=	100		

(Histopathology techniques=15 + Clinical pathology/hematology/blood banking exercise=25 + slide spotting=45 + gross spotting=15)

Course Content

A. Theory:

- General Pathology including Immunopathology
- Systematic Pathology
- Hematology
- Blood Banking including transfusion medicine
- Cytopathology
- Laboratory organization including Quality Control
- Basic Microbiology and Clinical biochemistry

B. Techniques and their application

General

- Principles of sample collection for Hematology and Clinical Pathology
- Histopathology and cytology specimens, urine analysis, stool examination
- Pregnancy tests, semen analysis, microbiological and biochemical tests
- Waste disposal and universal precautions

Cytology

1. Fine needle aspiration cytology – staining and interpretation
2. Cytology of body fluids – Staining and interpretation

Histopathology

1. Histopathologic techniques including section cutting.
Haematoxylin and Eosin stain
1. Anticoagulants
2. Preparation of Leishman's stain and reagenes for blood counts
3. Hands on experience in different methods of hemoglobin estimation, RBC, WBC, Platelets and Reticulecyte counts, AEC, PCV, ESR and absolute indices and coagulation tests/work up.
4. Preparation and interpretation of Peripheral smear and Bone maroow.
5. Hemolytic workup including sickle cell preparation, HBF and electrophoresis etc.
6. Cytochemistry peroxidase/sudan black B,PAS,LAP,NSE and perls' Stain
7. Quality control and use of automated cell counters
8. Cleaning of Glass ware

Blood Bank

1. Blood grouping and typing
2. Cross matching
3. Coomb's test
4. Donor screening and blood collection
5. Testing for STS,HIV, hepatitis B & C etc.
6. RH antibody titration
7. Cold agglutinin titre
8. Quality control
9. Blood component preparation

Basic Microbiology

Experience in interpretation and reporting of

1. Grams Stain
1. Z N stain
2. Hanging drop
3. KOH/Lacto phenol preparation for fungi sterilization techniques, culture methods, identification and reporting – Training only interpretation of serological tests like widal, VDRL, HIV, HBV, CRP, RF, ASO

Clinical biochemistry

The Biochemistry applied to biochemical investigations.

Handling of Photocolorimeter, Spectrophotometer

PH meter, Plain Photometer, semi Autoanalyser and Autoanalyser
Electrophoresis, Carrying out biochemical investigations like blood sugar, urea
creatinine, Proteins, bilirubin, SGOT, SGPT, Alkaline Phosphatase etc.
