Clinical Pathology Appointment

2013/14 Batch – Group 1

Programme

12.11.2018 – 8.30 am – 9.00 am - Introduction

1st Week	Groups assigned to lab work	Groups assigned to blood bank
9.00 – 11.00 am	Lab work	Blood bank
11.00 – 12.00 noon	Lecture	

2nd Week	Groups assigned to lab work	Groups assigned to blood bank
8.00 – 9.00 am	THP Lab Demonstration	Blood bank
9.00 – 11.00 am	Lab work	Blood bank
11.00 – 12.00 noon	Lecture	

3rd Week	Groups assigned to lab work	Groups assigned to blood bank
8.00 – 9.00 am	THP Lab Demonstration	Blood bank
9.00 – 11.00 am	Lab work	Blood bank
11.00 – 12.00 noon	Lecture	

Please find attached the details of the

- Lectures
- Laboratory demonstrations
- Small groups and their assigned sections

- Objectives and Tasks to be completed are uploaded on the moodle in Year 3.

Clinical Pathology Appointment 2013/14 Commencing on 12.11.2018 (6th Clerkship)
Teaching Programme - Lecture

	Date	Time	Lecture Topic	Lecturer	Venue
1st Week	12.11.2018	8.30 - 9.00 am	Introduction	Dr. S. Jayasinghe	THP Learning Room 1/2 or Old Auditorium
	13.11.2018	11.00 - 12.00 noon	Specimen collection in histopathology	Dr. E. Siriweera	Pathology Seminar Room
	14.11.2018	11.00 - 12.00 noon	Clinical use of blood and blood components	Dr. G. Karunadhipathy	Pathology Seminar Room
	15.11.2018	11.00 - 12.00 noon	Basic tests in haematology	Dr. M. Ratnayake/SR Haemat	Pathology Seminar Room
	16.11.2018	11.00 - 12.00 noon	Special tests in haematology	Dr. M. Ratnayake/SR Haemat	Pathology Seminar Room
2nd Week	19.11.2018	11.00 – 12.00 noon	Transfusion reaction and management	Dr. G. Karunadhipathy	Pathology Seminar Room
	20.11.2018 PH	11.00 - 12.00 noon			
	21.11.2018	11.00 - 12.00 noon	Liver function tests/Renal function tests	Dr. S. Jayasinghe	Pathology Seminar Room
	22.11.2018 PH	11.00 - 12.00 noon			
	23.11.2018	11.00 - 12.00 noon	Universal precautions and laboratory safety	Dr. N. Dissanayake/ Dr. V. Liyanapathirana	Com: Med: Seminar Room
3rd Week	26.11.2018	11.00 - 12.00 noon	Specimen collection in cytology	Dr. S. Wijetunge	Pathology Seminar Room
	27.11.2018	11.00 - 12.00 noon	CSF Analysis	Prof. R. Waduge	Pathology Seminar Room
	28.11.2018	11.00 - 12.00 noon	Specimen collection, transport and lab processing in microbiology	Dr. N. Dissanayake/ Dr. V. Liyanapathirana	Com: Med: Seminar Room
	29.11.2018	11.00 - 12.00 noon	OSPE	Dr. S. Jayasinghe	Pathology Practical Lab
	30.11.2018	11.00 - 12.00 noon	OSPE discussion	Dr. S. Jayasinghe	Pathology Seminar Room

Dr. S. Jayasinghe

Module Coordinator/Clinical Pathology Appointment

Clinical Pathology Appointment 2013/14 Batch Commencing on 12.11.2018 (6th Clerkship)
Laboratory demonstrations

2nd Week -

Monday (19.11.2018)	Tuesday (20.11.2018) PH	Wednesday (21.11.2018)	Thursday (22.11.2018) PH	Friday (23.11.2018)
8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am Histo Lab/Department of Pathology
Specimen collection Mrs. C. Samarakoon	Haematology Mrs. R. Gafoor	Urine Analysis Mrs. J. Gunawardena	CSF Analysis Mrs. C. Samarakoon	Histopathology & Cytopathology Mr. P. Karunarathna

3rd week

Monday (26.11.2018)	Tuesday (27.11.2018)	Wednesday (28.11.2018)	Thursday (29.11.2018)	Friday (30.11.2018)
8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am THP Laboratory	8.00 - 9.00 am Histo Lab/Department of Pathology
Specimen collection Mrs. C. Samarakoon	Haematology Mrs. N. D. Karunaratna	Urine Analysis Mr. P. U. B. Harangala	CSF Analysis Mrs. R. Jinasena	Histopathology & Cytopathology Mr. P. Karunarathna

Only for the two groups assigned to the laboratory/ Faculty Teaching Hospital Peradeniya.
The group doing Blood Bank will proceed to the blood back at 8.00am daily.

Dr. S. Jayasinghe
Module Coordinator/Clinical Pathology Appointment

Small groups and their assigned sections for lab work from 9.00 - 11.00 am

	1st Week					2nd Week					3rd Week				
Small Group	**Mon 12.11**	**Tue 13.11**	**Wed 14.11**	**Thu 15.11**	**Fri 16.11**	**Mon 19.11**	**Tue 20.11 PH**	**Wed 21.11**	**Thu 22.11 PH**	**Fri 23.11**	**Mon 26.11**	**Tue 27.11**	**Wed 28.11**	**Thu 29.11**	**Fri 30.11**
1 - 13	BB	BB	BB	BB	BB	Bio Chem	Bio Chem	Urine	Histo	Histo	Haemat	Haemat	Haemat	Micro	Micro
14 - 25	Haemat	Haemat	Haemat	Micro	Micro	BB	BB	BB	BB	BB	Bio Chem	Bio Chem	Urine	Histo	Histo
26 - 34	Bio Chem	Bio Chem	Urine	Histo	Histo	Haemat	Haemat	Haemat	Micro	Micro	BB	BB	BB	BB	BB

BB	Blood Bank
Haemat	Haematology Lab/Practical lab Path department
Micro	Microbiology Lab
Histo	Histopathology, Department of Pathology, Faculty of Medicine
Urine	Urine Lab/ Practical lab Path department
Bio Chem	Biochemistry Lab/Practical lab Path department

Dr. S. Jaysinghe
Module Coordinator/Clinical Pathology Appointment

Clinical Pathology appointment

Objectives

The students will rotate through haematology, biochemistry, histopathology and microbiology sections of the laboratory and the blood bank.

Duration – 3 weeks

At the end of the appointment the student is expected to

(1) Achieve the objectives stated under each section.
(2) Complete tasks in each section and submit a written report.

General objectives

1. Describe the universal precautions and laboratory safety procedures.
2. List the equipment and material needed in venipuncture
3. Observe and describe the correct procedure of venipuncture
4. List different kinds of specimen collection tubes and the samples collected for each tube
5. State how to correctly label the specimen container
6. State the details to be included in a request form
7. Name the anticoagulants and other chemicals used in collection tubes and their action
8. State the quantity of the samples collected for different tests.
9. Describe the process of specimen handling within the laboratory

Haematology Laboratory

Pre-requisite knowledge

1. Physiology of normal haemopoiesis
2. Response of the erythrocytes, leukocytes, and platelets to pathologic stimuli
3. physiology of coagulation
4. pathological basis of coagulation disorders

Students should be able to

1. Identify the following basic tests performed in the haematology lab
   - Full blood count
   - Blood picture
   - ESR
   - Basic coagulation tests (PT, APTT, BT)
2. List the indications for requesting the tests mentioned in 1
3. Describe the collection methods and errors of the test mentioned in 1
4. Describe how you would prevent the collection errors mentioned in 3
5. To interpret results of the tests mentioned in 1
6. List the equipments used in basic tests mentioned in 1
7. Know the normal reference ranges of the tests mentioned in 1

8. List the indications and interpretation of the following special tests
    G6 PD screening
    Reticulocyte count
    Osmotic fragility test
    Bone marrow aspiration and trephine biopsy
    Protein and Haemoglobin Electrophoresis
9. Observe the procedure and equipment used for bone marrow aspiration and trephine biopsy

Blood bank

Pre requisite knowledge

1. Normal composition of blood
2. Normal life span of the components of blood
3. Physiological basis of major and minor blood groups in humans
4. Microbiological organisms transmitted by blood and blood products
5. Immmunological basis of antigen antibody reactions

Students should be able to

1. Identify the different sections of the blood bank.
2. List the donor selection criteria.
3. Describe the blood donating procedure.
4. Describe blood screening procedure.
5. Identify blood groups using forward and reverse grouping.
6. Perform blood grouping and cross matching.
7. List the clinical use of blood components.
8. Explain how the blood components are prepared and stored.
9. State the indications for transfusion of the various blood components.
10. List common infectious disease risks of blood product transfusions.
11. List the types of transfusion reactions.
12. Describe the pathophysiology, clinical presentations, identification and management of transfusion reactions.
13. Explain the importance of blood specimen labeling, the process of issuing and administering blood products, including patient safety checks, required infusion times, and appropriate blood product storage limitations once products are issued from the blood bank.
14. Explain the pathological basis of hemolytic disease of the newborn and prenatal compatibility testing.
15. Explain the pathophysiology of Rh immune globulin prophylaxis in preventing hemolytic disease of the newborn.
16. List giving reasons the tests performed in
    a. investigating a transfusion reaction.
    b. haemolytic disease of the newborn.

Biochemistry laboratory

Pre requisite knowledge

1. Physiological functions of the body
2. Normal constituents of body fluids
3. Pathological basis of the diseases of organ systems

The student should be able to,

1. Identify the following routine tests performed in the biochemistry lab
   - Plasma glucose (RBS, FBS, PPBS, OGTT)
   - Liver function tests
   - Renal function tests
   - Bone profile (calcium, phosphate magnesium, alkaline phospatase)
   - Serum electrolytes
   - Lipid profile
   - Urine full report
   - CSF full report
2. List the indications for requesting the tests mentioned in 1.
3. Describe the collection methods and errors of the tests mentioned in 1.
4. Describe how you would prevent the collection errors mentioned in 3.
5. To interpret results of the tests mentioned in 1.
6. List the equipments used in basic tests mentioned in 1.
7. Know the normal reference ranges of the tests mentioned in 1.
8. Recognize flags indicated in analyzer reports.
9. Identify investigations performed to assess renal functions and interpret abnormal test results in renal failure and urinary tract infections.
10. Identify investigations performed to assess liver functions and interpret abnormal test results in acute and chronic hepatitis, liver failure, prehepatic, hepatic and post hepatic jaundice.
11. State the tests performed in a CSF sample and interpret the results of abnormal reports to arrive at an aetiological diagnosis.
12. State the tests performed in a seminal fluid sample and know how to interpret the results of abnormal reports.
13. List bedside tests used for patient care (urine heat tests, Benedict tests, urine strip tests/dipstick, urine hcg)
14. Describe the procedure for such bedside testing and their interpretation.
15. List the biochemical investigations that are sent to reference laboratories and state the indications for the tests.

Histopathology laboratory

The student should be able to

1. Identify the types of specimens received in the laboratory for
    a. Histopathology
    b. Cytopathology
2. To state the following with regard to each of the specimen types
    a. Procedures that are employed to obtain the samples
    b. Type of container used
    c. Type of transporting medium
    d. Amount of transport medium to be added
    e. Proper labeling of specimens
    f. Details to be included in the accompanying request form
3. Explain the reasons for following the above procedures when collecting and transporting specimens for histopathology and cytopathology.
4. Observe and list the events that occur in the histopathology lab after a specimen is received in the laboratory.
5. Observe and outline the processing of histopathology and cytopathology specimens.
6. List the basic histochemical stains used in histopathology and cytopathology.
7. State rapid diagnostic tests that can be performed in the histopathology laboratory.
8. Explain the difference between cytological diagnosis and histological diagnosis.
9. List the common sites where fine needle aspiration(FNAC) is performed.
10. State the advantages and limitations of FNAC.
11. Describe the aim, procedure and pathological basis of the Papanicolaou test.

Microbiology laboratory visit

After completing the microbiology laboratory visit students should be able to,

1. Explain the basic functions of a microbiology laboratory.
2. Discuss the principles of sample collection, storage, transport to include request from filling and specimen labeling in relation to samples being sent for microbiological investigations to include bacteriology, virology, mycology, serology and molecular biological investigations.
3. Describe the approximate time durations taken to obtain results from commonly requested cultures to include urine, blood, sputum, pus/wound swabs and stool cultures and antibiotic sensitivity testing
4. Discuss the importance of interpretation of common culture reports in relation to infection, colonization and contamination
5. Discuss the role of a microbiology team to include microbiologists, medical officers of microbiology, laboratory technicians and infection control nurses in patient management.
6. Describe the different modes of communication that can be employed to ensure the proper communication of microbiological laboratory results for optimal patient management.

Tasks to be completed during the histopathology rotation

1. List 5 different types of specimens received in the histopathology laboratory and state the following
   A. Patient details and date received in the laboratory
   B. Indication for performing the test
   C. Transport medium used
   D. Comment on the request forms received with the specimens
   E. Comment on the specimen collection
   F. State the time taken to issue a report

Tasks to be completed during the chemical pathology rotation

1. List 5 tests performed in the biochemistry laboratory
2. Briefly describe how samples are collected for each of these tests
3. Identify an abnormal biochemistry report for each of the tests mentioned in 1.
4. For each of the reports
   4a. state the patient details and date of performing the test
   4b. interpret the results
   4c. discuss the possible causes for the abnormalities detected.

Tasks to be completed during the haematology rotation

1. Identify an abnormal report for each of the following tests
   a. Full blood count
   b. Erythrocyte sedimentation rate (ESR)
   c. Blood picture
   d. Prothrombin time (PT)
   e. Activated partial thromboplastin time (APTT)
2. In each of the tests mentioned in 1.
   a. Write down the patient details and date of performing the test
   b. State how the specimens were collected
   c. List the indications
   d. Comment on the request form
   e. Interpret the results
   f. Give possible causes for the results

Tasks to be completed during the Blood Bank rotation

1. Perform blood grouping and cross matching