EXAMINABLE AREAS FOR DOCTOR OF MEDICAL LABORATORY SCIENCE

MICROBIOLOGY

(Parasitology, Bacteriology, Mycology, Virology/Serology & Immunology)

1. Collect clinical specimens from patients in the proper ways.

2. Know the guidelines and procedures of handling and documentation of clinical specimens.

3. Apply specimen acceptance/rejection criteria.

3. Familiarize with computerized system of specimens' entry and distribution to respective work benches

4. To categorize specimens according to their turn around time (distinguish between routine and STAT/Urgent tests).

4. Perform urine analysis efficiently as regarding macroscopic, biochemical, and microscopic examinations.

5. Perform stool analysis efficiently considering macroscopic and microscopic examinations.

6. Take appropriate actions when a result has serious clinical implications.

7. Ensure test results to be interpreted correctly and adequate records to be kept.

8. Perform staining techniques and quality control (QC) of stains.

9. Utilize aseptic techniques and safe handling of infectious material.

10. Prepare and do QC of culture media and preservation of stock strains used in performance testing.

11. Inoculate broth and agar culture media and plating out techniques.

12. Read and interpret cultures.

13. Use biochemical phenotypic techniques to identify bacteria isolates.

14. Perform antimicrobial susceptibility testing and QC of procedure and discs.

15. Efficient use and care of lab equipment (daily, weekly and monthly maintenance) used in the microbiology laboratory.

16. Perform immunological techniques and QC of antigen and antibody reagents.

17. Report and verify microbiological test results.

18. Take appropriate action(s) when a result has serious patient or public health implications.

19. Interpret microbiology test reports correctly.

20. Perform special microbiology techniques

21. Perform and interpret Molecular Infectious Disease Rapid testing

22. Perform semen analysis

23. Recognize appropriate specimen type, quantity and quality for the diagnosis of clinically significant parasites (eg. Malaria, Babesia, Filaria, Scabies, etc)

HAEMATOLOGY & TRANSFUSION SCIENCE (BLOOD BANK LABORATORY)

1. Acquire practical skills of proper phlebotomy techniques during the internship period: (a) To disinfect the blood collection site with appropriate disinfectant. (b) To know how to apply a tourniquet and for desirable time. (c) To detect the preferred venous access sites. (d) To insert the needle properly for blood withdrawal. (e) To take care of the patient to avoid complications during and after blood collection process.

2. Perform routine hematological tests (i.e., CBC, WBC count, WBC differentials, ESR, Reticulocyte count, etc.

3. Prepare and stain blood films with routine and special stains.

4. Report and interpret blood films comment: red cells, white cells, platelets.

5. Perform or observe special techniques (e.g., Hb electrophoresis, HPLC, Blood film (Thick and Thin) for detection of malaria parasites, sickle cell screening, etc.)

6. Screen test for G6PD deficiency.

7. Utilize tests to screen for bleeding disorders: coagulation profile, clotting profile.

8. Report and verifying haematological test results.

9. Deal with critical haematology test results & panic values: Take appropriate actions when a result has serious clinical implications.

10. Ensure test results to be interpreted correctly and adequate records to be kept.

11. Blood autoanalyzer calibration, Quality control of reagents, trouble-shooting.

12. Perform Blood grouping (ABO, Rh) and compatibility tests.

13. Carry out Blood storage for transfusion and investigation of transfusion reactions.

14. Prepare film from bone marrow aspirates.

CLINICAL CHEMISTRY (CHEMICAL PATHOLOGY)

1. Demonstrate knowledge on specimen collection, reception (based on acceptance & rejection criteria), transport, sample preparations and proper storage for possible re-testing at a later date.

2. Perform different clinical chemistry laboratory tests under supervision.

3. Interpretate general and special biochemical test values for healthy and disease conditions

4. Practice calibration procedures and quality control for various biochemical tests

5. Operate of the instrument according to the standard operational manual

6. Understand instrument breakdown/trouble-shooting and corrective maintenance.

7. Recognize panic values and immediately report these findings to the supervisor

8. Implement laboratory quality management.

9. Perform other duties as may be assigned or required.

10. Documentation and validation (under supervision) of test results

HISTOPATHOLOGY

HISTOTECHNOLOGY AND CYTOPATHOLOGY

1. Recognize appropriateness of specimen type, size, and quality.

2. Apply specimens' acceptance/rejection criteria: Review specimen type, size and appropriateness of the preservative and container for histopathology.

3. Preserve and handle specimens for the requested tests

4. Exhibit knowledge of different stains and staining protocols including immuno-histo/cyto-chemical staining

5. Processing of body fluids by centrifugation

6. Papanicolaou staining of cytology specimen

7. Romanowsky staining of cytologic specimen

8. Destaining and restaining of papnicoulau stained smears

9. Preparation of fixatives

10. Selection of tissue blocks for processing.

11. Tissue processing

12. Embedding of tissue in paraffin wax

13. Double embedding (agar/paraffin wax)

14. Microtomy

15. Decalcification of hard (calcified) tissue

16. Determination of end-point of decalcification

17. Haematoloxylin and eosin staining

18. Periodic acid Schiff's stain

19. Diastase periodic acid Schiff's stain

20. Alcain blue-pas stain

21. Perl’s Prussian blue stain