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University Examinations 2024/2025

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF MEDICAL LABORATORY AND BACHELOR OF MEDICAL MICROBIOLOGY**

HML 3217/ HMM 3218: PRINCIPLES OF MEDICAL PARASITOLOGY

DATE: JANUARY 2025

TIME: 3 HOURS

INSTRUCTIONS:

Answer *All* questions

Ensure that all your answers are properly numbered

Part I multiple Choice Questions (MCQ): Write the correct answer on the space provided in the answer booklet. Each MCQ is one mark

Part II: Short Answer Questions – Answer questions following each other on the answer booklet

Part III: Long Answer Questions – Answer any two questions on the answer booklet

SECTION A: MULTIPLE CHOICE QUESTIONS (20 marks)

1. Which of the following is a definitive host?

- a) A host where the parasite undergoes fertilization and reaches sexual maturity
- b) A host harboring the larval or immature stage of a parasite
- c) A host that provides nutrients for the parasite but does not support reproduction
- d) A host where the parasite does not complete its lifecycle

2. Which mode of transmission occurs when a parasite is passed from mother to child via the placenta?

- a) Horizontal direct transmission

- b) Indirect transmission
- c) Vertical direct transmission
- d) Ingestion of contaminated food

3. Which of the following is a key step in the Kato-Katz technique?

- a) Centrifugation of the stool sample
- b) Preparation of a thick smear of stool
- c) Inoculation into culture media
- d) Use of a formalin solution for fixation

4. What is the primary effect of a parasitic infection on the host's body?

- a) Improved immune system function
- b) Increased nutrient absorption
- c) Damage to tissues and organs
- d) Enhanced growth and development

5. Which stage of quality assurance ensures that the correct specimen is collected and preserved properly in parasitology?

- a) Analytical stage
- b) Post-analytical stage
- c) Pre-analytical stage
- d) Reporting stage

6. What is the main component of the Entero-Test procedure?

- a) A blood sample
- b) A stool sample
- c) A capsule containing a gelatin string
- d) A biopsy of intestinal tissue

7. What is the main objective of the analytical stage in parasitology laboratory testing?

- a) Collection and transport of the specimen
- b) Performing tests and ensuring accuracy of results

- c) Reporting the test results to clinicians
- d) Ensuring proper disposal of test materials

8. Which of the following is a commonly used preservative for faecal parasites?

- a) Formalin
- b) Buffered saline
- c) Ethanol
- d) Lugol's iodine

9. What is the purpose of preparing permanent mounts in parasitology?

- a) To preserve parasites for future reference and study
- b) To prevent contamination during examination
- c) To improve the visibility of parasites under the microscope
- d) To speed up the diagnostic process

10. Which technique is commonly used to examine blood for parasitic infections like malaria?

- a) Floatation technique
- b) Culture methods
- c) Thin and thick blood films
- d) Sedimentation technique

11. In xenodiagnoses, which of the following is typically used to detect parasitic infections?

- a) Microscopy
- b) Immunological tests
- c) Inoculation of parasites into animals
- d) Faecal concentration techniques

12. Which of the following methods is used for detecting parasitic infections in urine samples?

- a) Serological tests
- b) Sputum examination
- c) Filtration methods
- d) Muscle biopsy

13. The floatation technique in faecal concentration is primarily used to:

- Separate heavier parasites from lighter materials
- Concentrate parasites based on density differences
- Remove debris from parasite samples
- Dissolve faecal matter completely

14. Which technique is more effective for detecting larger and heavier parasites in stool samples?

- Floatation technique
- Sedimentation technique
- Immunological diagnosis
- Xenodiagnosis

15. Which of the following is a criterion for rejecting a stool sample in the parasitology laboratory?

- Sample collected in a clean container
- Sample mixed with urine or water
- Sample delivered within two hours of collection
- Sample without preservatives

16. Which stain is commonly used to visualize blood parasites, such as *Plasmodium* species?

- Field's stain
- Giemsa stain
- Lugol's iodine
- Safranin stain

17. Which reagent is used for preparing thick and thin blood films for parasitological examination?

- Formalin fixative
- Acridine orange
- Buffered saline
- PBS (Phosphate Buffered Saline)

18. What is the purpose of using a thick blood film in parasitology?

- To visualize the structure of the parasite
- To detect low parasitemia in blood samples
- To observe motility of parasites
- To differentiate between parasite species

19. Which of the following methods is used for microscopic examination of intestinal parasites?

- Thick blood film
- Thin blood film
- Iodine staining
- Xenodiagnosis

20. What is a critical safety measure in a parasitology laboratory to prevent infection?

- Wearing a protective mask
- Using strong disinfectants for all surfaces
- Proper disposal of contaminated materials
- Washing hands only before handling samples

SECTION B: SHORT ANSWER QUESTIONS (40 MARKS)

1. Describe Enterotest (String test) for girdia detection	6mks
2. Explain how you will conduct risk assessment in analytical lab	6mks
3. Describe wet technique in preparation of permanent mounts	8mks
4. What is the difference between?	8mks
a. Commensalism and parasitism	
b. Obligate and temporary parasite.	
c. Definitive and intermediate host	
d. Biological vector and mechanical vector	
5. Outline the sources of exposure to parasites	6mks
6. Mention possible parasites that are found in the following specimens	6mks

- a. Stool
- b. Blood
- c. Urine
- d. Sputum
- e. CSF

SECTION C: LONG ANSWER QUESTIONS (40 MARKS)

1. Discuss 7 methods used in preservation of parasitological specimens 14mks
a) Permanent mounts of parasites in specimens is key in the lab. Explain 6mks
2. A 35-year-old male presents to the clinic with complaints of persistent abdominal pain, nausea, and diarrhea for the past three weeks. He reports recent travel to a tropical region where he consumed unfiltered water and undercooked food. On physical examination, he has a tender abdomen with slight distension and reports weight loss of 5 kg during the past month
 - a) Describe one concentration techniques you will use to detect this eggs in stool 12mks
 - b) Describe a method you will use to count the eggs to determine the intensity of the infection 8mks
3. Discuss any 5 different samples used in detection of parasites clearly outlining processing procedures 20mks