

2407/301  
PARASITOLOGY AND HISTOLOGICAL  
TECHNIQUES  
Oct./Nov. 2022  
Time: 3 hours



**THE KENYA NATIONAL EXAMINATIONS COUNCIL**  
**DIPLOMA IN MEDICAL LABORATORY TECHNOLOGY**  
**PARASITOLOGY AND HISTOLOGICAL TECHNIQUES**

**3 hours**

**INSTRUCTIONS TO CANDIDATES**

*This paper consists of TWO sections, A and B.  
Answer ALL the questions in section A and any THREE questions from section B in the answer booklet provided.  
Each question in section A carries 4 marks while each question in section B carries 20 marks.  
Maximum marks for each part of a question are indicated.  
Candidates should answer the questions in English.*

**This paper consists of 3 printed pages.**

**Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**

SECTION A (40 marks)

Answer ALL the questions in this section.

1. For each of the following parasites, name the mode of transmission in humans:
  - (a) *Trichinella spiralis*; (1 mark)
  - (b) *Leishmania* spp; (1 mark)
  - (c) *Trichomonas vaginalis*; (1 mark)
  - (d) *Strongyloides stercoralis*. (1 mark)
2. State four parasitic factors which influence host susceptibility to parasitic infections. (4 marks)
3. Outline the procedure for formal detergent concentration technique. (4 marks)
4. Draw labelled diagrams of *Entamoeba histolytica*'s:
  - (a) mature cyst; (2 marks)
  - (b) immature cyst. (2 marks)
5. Illustrate the life-cycle of *Ancylostoma duodenale*. (4 marks)
6. Differentiate between autopsy and biopsy. (4 marks)
7. Differentiate between formaldehyde and glutaraldehyde as fixatives. (4 marks)
8. (a) Define "decalcification". (2 marks)  
(b) State any two criteria for a good decalcifying fluid. (2 marks)
9. (a) Outline the procedure of clearing tissues. (2 marks)  
(b) Name any two clearing agents. (2 marks)
10. Describe tissue wax infiltration method during permanent slide preparation. (4 marks)

**SECTION B (60 marks)**

*Answer any THREE questions from this section.*

11. (a) Explain the principle of Perl's Prussian blue staining technique. (3 marks)
- (b) (i) Outline the staining procedure of Perl's Prussian blue technique. (14 marks)
- (ii) State the expected results in (b(i) above. (3 marks)
12. Describe museum preservation technique by Kaiserling solutions. (20 marks)
13. Outline the causes of the following faults in section cutting, giving remedy for each:
- (a) coarse chatter; (12 marks)
- (b) ribbons of section curved. (8 marks)
14. (a) Outline the life-cycle of plasmodium species. (10 marks)
- (b) Describe prevention and control of the parasite in 14(a) above. (10 marks)
15. (a) (i) Outline the life-cycle of black fly. (4 marks)
- (ii) Name the disease transmitted by black fly. (1 mark)
- (b) (i) Describe the morphology of a body louse. (7 marks)
- (ii) Name any **four** diseases transmitted by louse and their causative agents. (8 marks)

**THIS IS THE LAST PRINTED PAGE.**