



KENYATTA UNIVERSITY
END OF SEMESTER JOINT CAT FOR THE DEGREE OF BACHELOR OF
MEDICINE AND BACHELOR OF SURGERY (MBChB Level 2.1)
HPA 200: PATHOLOGY I

Date 15th DECEMBER 2021

Time : 9.00AM -12.00 PM

INSTRUCTIONS:

1. This paper is composed of 17 questions.
2. Answer all of questions.

SECTION A

1. List the mechanisms of fatty changes (5marks)
2. Outline the mechanism by which reactive oxygen radicals are removed from the body (5marks)
3. Briefly explain pathologic calcification (5marks)
4. State any **FIVE** features that would distinguish an innate from an adaptive immune response (5marks)
5. Explain the aetiology of adrenoleukodystrophy and its immunological cure (5marks)
6. Outline **FIVE** mechanisms through which cell mediated immunity operates to confer host protection against invading pathogens. (5marks)
7. State any **FIVE** properties of haematopoietic growth factors (5marks)
8. a) Define phagocytosis (1mark)
b) Name the ligands for the following non-opsonic receptors (4marks)
 - (i) Dectin-1
 - (ii) Mannose receptor
 - (iii) CD 14
 - (iv) Scavenger receptor A

9.State any **FIVE** differences between endogenous and exogenous pathways of antigen processing and presentation (5marks)

10. A patient complained of palor and abdominal distension. On examination, the doctor found that the cause of such distension was increase in size of liver and spleen. If the laboratory investigations done to the patient revealed anaemia:

- State 2 protozoan parasites that may cause such clinical presentation (1 mark)
- State the type of anaemia in each case mentioned in (a) above (1mark)
- Explain the pathogenesis of anemia in each case mentioned in (b) above (2marks)
- Suggest an appropriate specimen for diagnosis of parasites involved in each case mentioned in (a) above (1mark)

11.Compare between *Giardia lamblia* and *Trichomonas vaginalis* with regard to habitat, locomotory structure, infective stage, mode of infection and characteristic clinical presentation (5marks)

Point of comparison	<i>Giardia lamblia</i>	<i>Trichomonas vaginalis</i>
Habitat		
Locomotory structure		
Infective stage		
Mode of transmission		
Characteristic clinical presentation		

12. With regard to Onchocerciasis:

- Name the causative agent (1mark)
- State why microfilariae cause more severe disease as compared to the adult worms (2marks)
- Name the infective stage and diagnostic stage of the causative agent in (a) above (1mark)
- Name two drugs that are used in treatment of Onchocerciasis (1mark)

13. Complete the table below

(5marks)

Nematode	Mode of transmission	Major clinical outcome
<i>Ancylostoma duodenale</i>		
<i>Enterobius vermicularis</i>		
<i>Trichinella spiralis</i>		
Adult <i>Ascaris lumbricoides</i>		
<i>Trichiura trichuris</i>		

14. State **FIVE** mechanisms used by human Cytomegalovirus to evade the host immune response

(5marks)

15. Outline the sequential steps in retroviral DNA integration

(5marks)

16. State the **FIVE** key criteria used to classify viruses

(5marks)

SECTION B

17. A) Describe the bacterial growth curve in batch culture

(16marks)

a) Name eight environmental factors that influence bacterial growth

(4marks)