



MURANG'A UNIVERSITY COLLEGE

(A Constituent College of Jomo Kenyatta University of Agriculture and Technology)

DIPLOMA IN APPLIED BIOLOGY
SCHOOL OF PURE AND APPLIED SCIENCES
CLASS: AS/BIO/13D
COURSE CODE: ASB 1309
MICROBIOLOGY , PARASITOLOGY AND IMMUNOLOGY

Date: 21ST JULY 2015

TIME: 2HRS

INSTRUCTIONS TO CANDIDATES

This paper consists of two sections; A and B. Answer ALL questions in section A and any THREE questions from section B. Each question in section A carries 4 marks while each question in section B carries 20 marks

SECTION A (40 marks)

Answer ALL the questions in this section

1. Differentiate between bacteria and fungi on the basis of their structure (4mrks)
2. State **FOUR** cytopathic effects produced by viruses on their host cells (4mrks)
3. Differentiate between:
 - a) Mechanical and Biological vector (2mrks)
 - b) Sporogony and schizogony (2mrks)
4. Complete the table below:-

<u>Parasite</u>	<u>Mode of transmission</u>	<u>Diagnosis</u>
_i) Trichuris trichuria	-	-
ii) Anacylostosoma duodenale	-	-
iii) Loa loa	-	-
iv) Wuchereria bancrofti	-	-

(4mrks)
5.
 - a) Define the term 'Autoimmune disease' (2mrks)
 - b) State functions on lymph nodes (2mrks)
6. A boy is stung by a bee on the face, after five minutes the boy's face swell considerably. Explain why this happens. (4mrks)
7. Name the immunoglobulin that can:-
 - i) Cross the placenta
 - ii) Mediates allergic response
 - iii) Protect external surfaces
 - iv) Exist as a pentamer (4mrks)

8. Differentiate between Agglutination and precipitation reactions (4mrks)
9. List and explain four causes of autoimmune diseases (4mrks)
10. A patient presented the following symptoms:-
- Redness and irritation of the eye
- Microfilaria in active movement in cornea
 - Elephantiasis of leg and scrotum
 - Hanging groin
 - Skin with dark spots (leopard skin)
- a) Identify the most probable cause of the above parasitological infection (1mrk)
- b) Name the intermediate host of the above named parasite (1mrk)
- c) Explain the pathological cause of the dark spots on the skin (2mrks)

SECTION B (60 Marks)

Answer any THREE questions from this section

11. a) Explain the mechanism of type III hypersensitivity (10mrks)
 b) Describe immunoelectrophoresis and its application in immunodiagnostic testing (10mrks)
12. a) Explain the 'Grave disease' (7mrks)
 b) Explain the role of mechanical barriers and the surface secretions in immunity against infections (13mrks)
13. a) Discuss Ascariasis under the following :-
 i) Causative agent and morphology (3mrks)
 ii) Pathogenicity (7mrks)
 iii) Treatment (2mrks)
- b) Differentiate between stercorarian and salivarian parasite development (8mrks)
14. Discuss strongloides stercoralis with respect to:-
 a) Transmission and life cycle (8mrks)
 b) Diagnosis (2mrks)
 c) Clinical features and pathogenicity (8mrks)
 d) Prevention and Control (2mrks)
15. a) Distinguish between complex (empirical) medium and synthetic medium (2mrks)
16. b) Describe Gas pak anaerobic system and its application in bacteria culture (12mrks)
17. c) Outline the determination of the minimum inhibitory concentration of an antibiotic. (6mrks)