



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2011/2012
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE IN
MEDICAL BIOCHEMISTRY

SBC 503: BIOCHEMISTRY OF PROTOZOANS

DATE: Monday 26th March, 2012

TIME: 9.00 a.m. – 12.00 p.m.

Section A: Answer ALL questions (5 marks each)

1. List the various targets for antiprotozoan drugs and give the rationale for their potential use in drug design
2. Giving specific examples, describe the mode of action of drug that directly destroy parasite DNA.
3. Using cyclic AMP and protein kinases as examples, explain the potential for inhibition of mechanisms of control and regulation in parasitic protozoa.
4. Describe three types of nutrition methods among protozoa
5. Explain the importance of (i) life stages and (ii) environment affect the energy metabolism in parasites **(5 marks)**
6. Explain why the kDNA is of particular interest as a potential drug target in parasitic protozoa
7. Explain the mode of action of Arsenicals against African trypanosomes
8. Discuss the potential application of glycolytic enzymes for inhibition by drugs

Section B: Answer any three questions (30 marks each)

1. (a) Illustrate the *de novo* synthesis of tetrahydrofolate
(b) Giving specific examples, discuss the inhibition of the pathway by antiprotozoal drugs
2. Illustrate the pathway of polyamine biosynthesis and explain action of drugs that inhibit this pathway
3. Describe the pathways of anaerobic glucose metabolism in *Entamoeba*
4. Using illustrations, describe the role of the hydrogenosome in energy metabolism of trichomonads