Answer question 1 from section A and one question from section B. Both section A and section B carry equal marks.

SECTION A (Answer question 1)

1. Write short notes on EACH of the following:

a. Explain the concept of a drug discovery screening cascade.

b. Using a clearly labelled diagram, illustrate the role of epigenetics in Trypanosoma brucei gene expression.

c. There are several mechanisms by which parasites can become resistant to drugs. Give two specific examples of drug resistance mechanisms employed by protozoan parasites.

d. Describe, with the aid of a diagram, how affinity chromatography and quantitative proteomics are used to identify diagnostic antigens.

SECTION B (Chose one question from questions 2 - 4)

2. What is the evidence that the surface of African trypanosomes participates in immune evasion and drug sensitivity?

3. Describe the haemozoin degradation pathway in *Plasmodium* parasites. Give two examples of anti-malarial drugs that target this pathway.

4. What gene expression features in particular present challenges in terms of developing anti-parasite vaccines? Use at least two parasites as examples.

End of paper