



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

**FOURTH YEAR FIRST SEMESTER EXAMINATIONS FOR
THE DEGREE OF BACHELOR OF SCIENCE AND BACHELOR
OF EDUCATION SCIENCE WITH INFORMATION
TECHNOLOGY**

MAIN CAMPUS

SZL 403: PARASITOLOGY I

Date: 3rd December, 2016

Time: 8.30 - 11.30 am

INSTRUCTIONS:

- Answer ALL questions in SECTION A and any TWO in SECTION B.

SECTION A [40 Marks]

Answer ALL questions in this Section. Each question carries 4 marks.

Q1. a) Vaginal micro-biota (*Lactobacillus* species, *Prevotella bivia* and *Atopobium vaginae*) are commonly identified as the hallmark of a normal or healthy, reproductive-age, human vagina. **Explain** the nature and basis of the co-existence.

b) List any **four (4)** factors that might disrupt the delicate balance in the vaginal milieu and increase the risk of 'opportunistic' or bacterial vaginosis.

Q2. State any **four (4)** ways by which protozoan parasites may be transmitted to a new host. In each case, give **one (1)** example of the parasite involved.

Q3. Recent studies have clearly established that there is a skin stage of malaria infection, where sporozoites display robust motility. State **four (4)** major routes, taken by the sporozoites, in the skin.

Q4. List **five (5)** proteins required by *Plasmodium* sporozoites to migrate through cells (cell traversal). For each protein, indicate **in a table**, where its activity has been demonstrated.

Q5. Define the term '**Facultative parasite**'

a) Give **two (2)** examples and in each case, name **one (1)** source of infection and briefly describe how the pathogen may gain entry into the human body and the resultant lesion.

Q6. List the following:

- a)** The pathogen typically associated with visceral leishmaniasis in the 'Old World'.
- b)** The common vector for visceral leishmaniasis in the 'Old World'.
- c)** **Two (2)** reservoir hosts for leishmaniasis.
- d)** **One (1)** pathogen typically associated with mucocutaneous leishmaniasis in South America.

Q7. With regard to human babesiosis, name the following:

- a)** **Two (2)** examples of '**large**' and '**small**' *Babesia* species.
- b)** **Reservoir hosts** and **vectors** in either group.

- c) **Highlight** the distinguishing features in their life cycles
- Q8.** List any **four (4)** most important vectors of *Trypanosoma cruzi* in Latin America.
- Q9.** List **four (4)** factors for which a parasite may be dependent on its host and name **one (1)** parasite in each case, as an example.
- Q10.** With regard to *Trichomonas vaginalis*, List the following:
- **Two (2)** groups of people with higher prevalence.
 - **Two (2)** anatomical sites in women and **two (2)** locations in men where the parasite resides.

SECTION B [30 marks]

Answer **ANY TWO (2)** questions in this Section. Each question carries **15 marks**.

- Q9.** Discuss morphological differentiation of the **four (4)** *Plasmodium* species using microscopy.
- Q10.** Discuss the pathogenesis of the mild-to-profuse watery diarrhoea that is the most common clinical manifestation of cryptosporidiosis.
- Q11.** Describe the life cycle of *Sarcocystis cruzi* in its various hosts, including humans.
- Q12.** Describe the development of *Toxoplasma gondii* in the primary host and in humans, highlighting differences, where applicable. Take note of the impact of the stage of the parasite ingested by the felid host, and how infection is acquired by humans.