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Family Name					
Given Name/s					
Student Number					
Teaching Period	Semester 1, 2019				

SBI302 – Clinical Microbiology 2	DURATION	
	Reading Time:	10 minutes
	Writing Time:	120 minutes
INSTRUCTIONS TO CANDIDATES		
Section A: Suggested Time: 20 Mins	Multiple Choice Questions: Answer ALL questions 1 Mark per question, Total: 20 Marks Answer on multiple choice answer sheet	
Section B: Suggested Time: 28 mins	Very Short Answer Questions: Answer ALL questions Marks as indicated, Total: 28 Marks Answer on examination question sheet	
Section C: Suggested Time: 12 minutes	Short Answer Questions: Answer ALL questions Three marks per question, Total: 12 marks Answer in examination book	
Section D: Suggested Time: 60 mins	Long Answer Questions: Answer FOUR OF THE SIX questions. Marks as indicated, Total: 60 Marks Answer in examination book.	
EXAM CONDITIONS		
<u>You may begin writing from the commencement of the examination session.</u> The reading time indicated above is provided as a guide only.		
This is a CLOSED BOOK examination		
Any non-programmable calculator is permitted		
No handwritten notes are permitted		
No dictionaries are permitted		
ADDITIONAL AUTHORISED MATERIALS	EXAMINATION MATERIALS TO BE SUPPLIED	
No additional printed material is permitted	1 x 20 Page Book 1 x 5-Multiple Choice Answer Sheet	

**THIS EXAMINATION IS PRINTED
DOUBLE-SIDED.**

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LEFT BLANK.**

Section A

Multiple Choice Questions

Total No of Marks for this Section: 20

This section should be answered on the Answer Sheet provided. Please ensure that your name and student number have been written on the Answer sheet and placed in the completed Answer Booklet.

Marks for each question are indicated. Suggested time allocation for Section A: 20 mins

Section B

Very short answer questions.

Total No of Marks for this section: 28

This section should be answered in the space provided on the question sheet.

Marks for each question are indicated. Suggested Time allocation for Section B: 28 minutes

Question 1

Please match an item in the left column with an item in the right column, by drawing lines. Five lines only to be provided, with each item indicated once and once only.

(Marks: 5)

Encompasses mushrooms	Zygomycota
Dermatophyte	Caused by just one species.
<i>Fonsecae</i>	Basidiomycota
Encompasses <i>Rhizopus</i>	Chromoblastomycosis
Sporotrichosis	Onychomycosis

Question 2

List five systemic mycoses caused by dimorphic fungi. For each indicate the part of world in which it is most likely to be a problem, and the causative organism.

<u>Disease</u>	<u>Where in the world?</u>	<u>Causative organism</u>

(Marks: 5)

Question 3

Please respond to the following statements by indicating if each statement is **TRUE** or **FALSE**. Justify your answer with an example and/or a supporting fact.

- a. *Candida albicans* is the only pathogenic member of the genus *Candida*.

(Marks:2)

- b. Microsporidia are usually grown on SDA agar.

(Marks:2)

- c. Fungi that cause superficial infections can on occasion be very dangerous.

(Marks:2)

- d. Only enveloped viruses have VAPs.

(Marks:2)

- e. Viral infection can lead to an exantham.

(Marks:2)

f. Replication of HPV in episomal form can directly cause cancer

(Marks:2)

g. Orthomyxovirus causes a camel-associated respiratory disease.

(Marks:2)

h. A herpesvirus causes molluscum contagion.

(Marks:2)

i. Paramyxoviruses are very important vaccine targets.

(Marks:2)

Section C.

Short Answer Questions.

Total No of Marks for this section: 12

This section should be answered in the Examination Book provided.

Marks for each question are indicated. Suggested time allocation for Section C: 12 minutes

Question 1

Define the term “dead-end host” and outline a life cycle that serves as an example.

(Marks: 3)

Question 2

Briefly discuss this statement: ‘Parasitic worms have high evolutionary diversity with respect to total animal diversity’. Include in your answer the names of the major lineages of parasitic worms.

(Marks: 3)

Question 3

Outline the *Strongyloides stercoralis* diagnostic procedure that makes use of an agar plate.

(Marks:3)

Question 4

Name three parasitic protozoan genera where diagnosis is frequently performed by microscopic examination of faecal specimens. Include in your answer a significant and distinctive fact concerning the disease caused, or the organism itself.

(Marks:3)

Section D

Long Answer Questions

Total Number of Marks for this section: 60

ANSWER FOUR OF THE SIX QUESTIONS

This section should be answered in the Examination Book provided.

Marks for each question are indicated. Suggested time allocation for Section D: 60 minutes

Question 1

Compare and contrast six different categories of “courses” of viral disease – in other words how the disease may manifest. Provide a specific example of each with a short description.

(Marks: 15)

Question 2

Describe three viruses that can infect the human nervous system. Include in your answer causative viruses, disease manifestation, disease transmission, and clinical and public health measures. It may be helpful to provide at least some of the information in tabular form.

(Marks: 15)

Question 3

Successful development of a vaccine for a viral pathogen requires both that development is possible and practical, and the benefits of the vaccine justify the investment in vaccine development research. Provide three examples of human infecting viruses for which there are vaccines, and describe why you think the vaccine development was seen as being worth the investment. Also, list three viral pathogens of humans for which there is no vaccine in general use, and discuss possible reasons why no vaccine has been developed and/or introduced into practice.

(Marks: 15)

Question 4

Compare and contrast hepatitis A, hepatitis B and hepatitis C. Include in your answer a description of the causative virus, disease manifestation, disease transmission, and clinical and public health measures. It may be helpful to provide at least some of the information in tabular form.

(Marks: 15)

Question 5

Outline current understanding of the relationship between virus infection and cancer in humans. Include in your answer a list of examples and discuss TWO of these examples in as much detail as you can.

(Marks: 15)

Question 6

You have a clinical specimen that you suspect contains an RNA virus of interest. Outline strategies to:

1. Detect whether the viral genome is present at all
2. Determine the amount of viral genome present
3. Determine the location of the viral genome in a histological preparation of the specimen.

Include in your answer the essential elements of how any methods that you mention work. Diagrams will be helpful.

(Marks: 15)