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Family Name	
Given Names	
Student Number	
Teaching Period	Semester 1, 2017

FINAL EXAMINATION	DURATION				
SBI302 – Clinical Microbiology 2	<table border="1"> <tr> <td>Reading Time:</td> <td>10 minutes</td> </tr> <tr> <td>Writing Time:</td> <td>120 minutes</td> </tr> </table>	Reading Time:	10 minutes	Writing Time:	120 minutes
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INSTRUCTIONS TO CANDIDATES

The examination has 4 sections

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

You may begin writing from the commencement of the examination session. 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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Section B

Very short answer questions.

Total No of Marks for this section: 28

This section should be answered in the space provided.

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.

(Marks: 5)

- | | | |
|--------------------------------|-------|-----------------------------------|
| A. Ascospore | _____ | 1. Chromoblastomycosis |
| B. <i>Fonsecaea</i> | | |
| C. Known for brain infections. | _____ | 2. HIV |
| D. Intracellular parasite | | |
| E. <i>Talaromyces</i> | _____ | 3. <i>Encephalitozoon</i> |
| | _____ | 4. <i>Cryptococcus neoformans</i> |
| | _____ | 5. Haploid chromosomes. |
-

Question 2

Complete the following by adding the most appropriate word or phrase.

Coccidioides immitis causes the disease _____. It is exclusively found in the west of the _____, primarily in regions of low _____, and where _____ may be present. The infectious forms are barrel shaped _____ which form as a result of fragmentation of _____. These enter the human host via the _____ tract, where they convert to _____ which become full of _____. In 1% of patients, infection becomes _____.

(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) *Blastomyces* conidia are tuberculate.

(Marks:2)

- b) Severe *Emmonsia* infections of humans are primarily seen in South America.

(Marks:2)

c) Polyoma virus can infect the human central nervous system.

(Marks:2)

d) There is such a thing as “the common cold virus:”

(Marks:2)

e) All DNA viruses that infect humans replicate in the nucleus.

(Marks:2)

f) Norwalk virus outbreaks are best controlled by vaccination.

(Marks:2)

g) Orthomyxoviruses are notable for inducing the formation of syncytial cells.

(Marks:2)

h) Enteroviruses are mainly known for being major causes of gastroenteritis.

(Marks:2)

i) HIV most likely crossed into humans from animals.

(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

Give **ONE** example of a significant human parasite from each of the following: nematodes, cestodes, trematodes, amoebae, flagellates, arthropods.

(Marks: 3)

Question 2

Outline **THREE** complications of the strategy of diagnosing intestinal nematodes by observing their eggs using microscopic examination of faeces.

(Marks: 3)

Question 3

Outline a parasitic worm life cycle that involves humans and rodents.

(Marks:3)

Question 4

Describe a diagnostic method/strategy where there is considerable similarity between a mycological investigation and a parasitological investigation.

(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

Provide an account of cutaneous fungal infections of humans. Include in your answer different classes of infection, diagnostic strategies, and morphological descriptions of **THREE** relevant fungal taxa, with drawings.

(Marks: 15)

Question 2

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 3

Describe, compare and contrast the genomes and replication cycles of two different families of virus that have segmented genomes.

(Marks: 15)

Question 4

Provide a detailed account of human disease caused by the families *Togaviridae* and *Flaviviridae*. Include in your answer transmission mechanisms, and examples of public health interventions, including a highly innovative initiative developed in Australia.

(Marks: 15)

Question 5

Discuss this phrase: “The evolution of viral replication strategies is constrained by available host functions”. Include at least **TWO** detailed examples of replication mechanisms in your answer.

(Marks: 15)

Question 6

Describe how the technique known variously as “dideoxy”, “chain termination”, or “Sanger” DNA sequencing works. Include in your answer fully manual, and more automated embodiments.

(Marks: 15)