

Instructions to candidates

Duration: 02 hours

Number of questions: : Part A : Four (04) structured essay questions
Part B: Two (02) essay questions

Mark allocation: 100

Answer all questions

PART A

a. What is meant by 'Virulence' of an infectious microorganism?

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(02 marks)

b. List five (05) frequently identified viruses in water, associated with waterborne outbreaks.

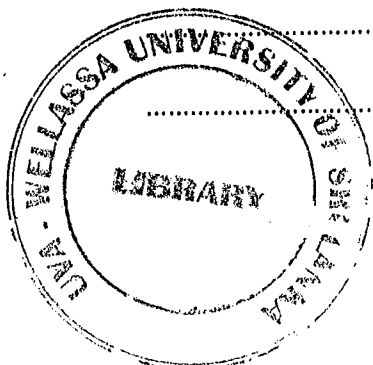
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(05 marks)

c. What is a selective media? Give an example for a selective media.

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(04 marks)



d. What are the infectious doses of following bacteria?

I. enteropathogenic *Escherichia Coli* :

II. *Shigella* :

III. *Vibrio cholerae* :

(03 marks)

2.

a. List four (04) types of the faecal indicator organisms.

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(04 marks)

b. Who are Faecal coliforms ?

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(03 marks)



c. Draw a fully labelled diagram of lytic cycle of viruses.

(marks)

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(05 marks)

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U/mL.

b. You have taken a water sample from a drinking water tank and you observed that there are 100 colony forming units (per millileter) of *Salmonella typhi*. The tank cannot be emptied for another 24 hours. If the minimum infectious dose for the organisms is 10^6 cells and the generation time of the organisms is 30 minutes, will it cause diseases to the people drinking that water. Justify your answer.

(08 marks)



4.

a. Briefly describe the following.

Bacterial capsule

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Bacterial Endospores

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(04 marks)

b. Why protozoan cysts are considered as dangerous, specially in drinking water?

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(02 marks)

c. 'Contamination of groundwater with viruses is of great concern'. Briefly explain the reason.

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(05 marks)

