

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF MEDICINE

MEDICAL SCHOOL

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY DEGREE
PART 1 EXAMINATIONS

(MCM 1102) : MICROSCOPY, CELL STRUCTURES, BACTERIA & FUNGI

DATE : DECEMBER 2005

TIME : 3 HOURS

Instructions to Candidates

- 1) Answer **all** questions.
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SECTION A

1. Discuss the role of the clinical microbiology laboratory in assisting physicians in the diagnosis and treatment of infectious diseases. (20)
 2. Write an essay on bacterial pathogenesis highlighting how pathogens access host tissue, evade host defenses and cause damage. (20)
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SECTION B

3. a) What are the important features of bacterial spores and what are their medical implications? (10)
- b) Briefly explain the medical importance of each of the following bacterial structures:
 - i) flagella (3)
 - ii) capsule (3)
 - iii) cell wall (3)
 - iv) pilus (3)
 - v) plasmid. (3)

4. The following are 10 examples of human mycoses:
tinea versicolor, blastomycosis, sporotrichosis, histoplasmosis,
candidiosis, aspergillosis, chromoblastomycosis, onchomycosis,
cryptococcosis, dermatomycosis.
- a) Draw a table in which you classify each of the above as superficial,
subcutaneous, deep seated or opportunistic. (5)
- b) Briefly describe the series of steps that would be taken in the
laboratory diagnosis of a fungal infection of the skin using direct
microscopy and culture. (10)
5. Describe the various morphologies (shapes) that different bacteria take
when observed under a **light** microscope. Give two (2) named examples
(genus and species) for each shape and state the Gram reaction for each
of them. (10)