UNAM
UNIVERSITY OF NAMIBIA

FACULTY	AGRICULTURE, ENGINEERING AND NATURAL SCIENCES		
DEPARTMENT	FOOD SCIENCE AND SYSTEMS		
SUBJECT	GENERAL MICROBIOLOGY		
SUBJECT CODE	FST3681/F3611SG		
DATE	JUNE 2024		
DURATION	3 HOURS	**MARKS**	100

SECOND OPPORTUNITY EXAMINATION

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This question paper consists of **three (3)** pages including this front page.

Instructions:

- **Answer all five (5) questions**

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QUESTION 1

a) Define the theory of "Spontaneous Generation (**SG**)" as it was known to biologists between the 15^{th} and 18^{th} century. **[5]**

b) Discuss the application of the Cell structure and morphology to the prokaryotic taxonomy. **[5]**

c) Discuss the strategy used by bacteria to survive in dry environments such as soil and air in the absence of nutrients. **[5]**

d) Compare and contrast Matching and Similarity coefficients of the Numerical taxonomy. **[5]**

QUESTION 2

a) Compare and contrast:

i) Spirochaetes and Spirillum **[5]**

ii) A Pleomorphic and a coco-bacillus shape **[4]**

iii) Positive and negative staining procedures in microscopy. **[5]**

iv) Simple and differential stains **[6]**

QUESTION 3

a) Giving examples briefly discuss each of the following:

i) Aseptic techniques **[5]**

ii) The use of Halogens as disinfectants and antiseptics **[5]**

b) Outline five (5) safety precautions necessary in a microbiology laboratory. **[5]**

c) During the experiment of isolating microorganisms from various sources, you were able to obtain growth from cow dung on both Nutrient agar and Mc Conkey agar, but air sample was not able to produce growth on Mc Conkey agar. Explain. **[5]**

QUESTION 4

a) Define the features that differentiate Gram positive from Gram negative bacteria. **[6]**

b) Discuss the following flagellae arrangements found in bacteria:

i) Monotritious **[2]**

ii) Amphitritious **[2]**

iii) Peritritious **[2]**

c) Compare and contrast the following:

i) Pilli and fimbriae **[4]**

ii) Capsule and slime **[4]**

QUESTION 5

a) Discuss the chemical composition of a viral particle. **[6]**

b) Compare and contrast

i) Antibiotics and antibodies. **[4]**

ii) Foot and mouth disease (FMD) and Pasteurellosis **[6]**

iii) A Virus and prion. **[4]**

END OF EXAMINATION