



GRETSA UNIVERSITY - THIKA

**UNIVERSITY EXAMINATIONS
SEPTEMBER – DECEMBER 2021 SEMESTER**

**DIPLOMA IN PUBLIC HEALTH/COMMUNITY
HEALTH/NUTRITION AND DIETETICS**

COURSE CODE: DIEH 021

COURSE TITLE: MICROBIOLOGY AND PARASITOLOGY

DATE: 16 NOVEMBER 2021

TIME: 8.00 AM – 11.00 AM

INSTRUCTIONS TO CANDIDATES

1. SECTION A IS **COMPULSORY**.
2. SECTION B: ANSWER ANY OTHER **THREE** QUESTIONS.
3. **DO NOT** WRITE ANYTHING ON THIS QUESTION PAPER AS IT WILL BE AN EXAM IRREGULARITY.
4. ALL ROUGH WORK SHOULD BE AT THE BACK OF YOUR ANSWER BOOKLET AND CROSSED OUT.

CAUTION: All exam rooms are under CCTV surveillance during the examination period.

SECTION A: COMPULSORY

MULTIPLE CHOICE QUESTIONS [1-5]

[ONE MARK EACH]

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1. Father of microbiology is?
 - A. Louis Pasteur
 - B. Lister
 - C. A.V. Leeuwenhock
 - D. Robert Koch
 2. The antiseptic method was first demonstrated by?
 - A. Lwanowski
 - B. Lord Lister
 - C. Edward Jenner
 - D. Beijerinck
 3. Which of the following is not a recognized cause of diarrhoea?
 - A. Vibrio cholerae
 - B. Escherichia coli
 - C. Clostridium perfringens
 - D. Enterococcus faecalis
 4. Smallpox vaccine was first discovered by?
 - A. Robert Koch
 - B. Louis Pasteur
 - C. Lister
 - D. Edward Jenner
 5. Compound microscope was discovered by?
 - A. Antony von
 - B. Pasteur
 - C. Johnsen & Hans

SHORT ANSWER QUESTIONS: (ANSWER ALL QUESTIONS IN THIS SECTION)

1. Describe the routes of transmission of parasitic infections **[5 Marks]**
2. Outline any three reasons why microbial taxonomy is important. **[3 Marks]**
3. Highlight any five effects of parasites on human beings **[5 Marks]**
4. Explain the classification of protozoans of medical importance **[5 Marks]**
5. Explain the germ theory of disease causation **[4 Marks]**

6. Highlight the four Koch's postulates [4 Marks]
7. State any five measures preventing food borne diseases [5 Marks]
8. Outline four characteristics of bacteria [4 Marks]

SECTION B**[CHOOSE ANY THREE QUESTIONS]**

QUESTION ONE

Discuss the control of microorganisms in food under the following headings.

- a) Control by low temperature [4 Marks]
- b) Control by reduced water activity [4 Marks]
- c) Control by alteration of PH [4 Marks]
- d) Control by irradiation [4 Marks]

QUESTION TWO

Control by salting

[4 Marks]

- a) Explain the working principle of the following microbiological equipment
- i. Incubator [3 Marks]
 - ii. Biosafety cabinet [3 Marks]
 - iii. Autoclave [3 Marks]
- b) Describe the gram staining techniques [6 Marks]
- c) Describe the morphology of bacteria [5 Marks]

QUESTION THREE

- a) Explain the modes of reproduction in microbes [6 Marks]
- b) Describe the bacterial growth curve [8 Marks]
- c) Explain four physical factors that affects the growth and distribution of bacteria [6 Marks]

QUESTION FOUR

- a) To cause illness, a pathogen must overcome several hurdles. Discuss any of the two of these hurdles [10 Marks]
- b) Discuss food poisoning in reference to vibrio Cholerae under the following headings.
- i. Risk factors [3 Marks]
 - ii. Mode of transmission [4 Marks]
 - iii. Prevention and control [3 Marks]