

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF MASTERS IN SCIENCE

MICB 801: MICROBIOLOGICAL TECHNIQUES

STREAMS: MSC. MICROBIOOLOGY & BIOTECHNOLOGY

TIME: 3 HOURS

DAY/DATE: THURSDAY 08/04/2021

8.30 P.M. – 11.30 P.M.

INSTRUCTIONS

- *Answer any three questions*
- *Do not write on the question paper*

Question one

Discuss nuclear chemistry with regards to the following:

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|---|-----------|
| (a) Types of radiation | (6 marks) |
| (b) Biomedical uses of radiation | (5 marks) |
| (c) Biological effects of radiation | (5 marks) |
| (d) Difference between chemical and nuclear reactions | (4 marks) |

Question two

Describe the following processes

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|--------------------------|------------|
| (a) Plant DNA extraction | (5 marks) |
| (b) Various types of PCR | (15 marks) |

Question three

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| (a) Discuss tissue culture technique in plants and its advantages | (10 marks) |
| (b) Discuss techniques to prevent contamination when culturing tissues | (10 marks) |

Question four

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|---|------------|
| (a) Discuss 5 methods of direct serology | (15 marks) |
| (b) Outline the advantages of serological methods | (5 marks) |

Question five

Discuss the procedure and principle of the following biochemical tests

- (a) Imvic test (4 marks)
 - (b) Nitrate reductase test (4 marks)
 - (c) Sugar fermentation test (4 marks)
 - (d) Coagulase test (4 marks)
 - (e) Indole test (4 marks)
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