



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BIOLOGICAL SCIENCES
UNIVERSITY EXAMINATIONS FOR THE DEGREE OF MASTER OF SCIENCE IN
MICROBIOLOGY
FIRST YEAR FIRST SEMESTER 2018/2019 ACADEMIC YEAR
MAIN CAMPUS – REGULAR

COURSE CODE: SBT 837

COURSE TITLE: BIOTECHNOLOGY

EXAM VENUE:

STREAM: (MSC)

DATE: 26/4/19

EXAM SESSION: 9.00 – 12.00NOON

TIME: 2 HOURS

INSTRUCTIONS:

- 1. Answer all questions in Section A and any TWO questions in Section B**
 - 2. Candidates are advised not to write on the question paper**
 - 3. Candidate must hand in their answer booklets to the invigilator while in the examination room**
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SECTION A: COMPULSORY QUESTIONS**(30 MARKS)**

1)

- a) Outline the principles of recombinant DNA technology that have made the production of recombinant proteins a reality. (6 marks)
- b) Describe the composition of basal media used in cell and tissue culture. (6 marks)
- c) Describe the methods of regeneration in plant tissue culture. (6 marks)
- d) Contrast the Embden-Meyerhof and the Entner-Doudoroff glycolytic pathways citing their implications to microbial biotechnology. (6 marks)
- e) Identify the key issues a biotechnologist must consider in bioreactor designs. (6 marks)

SECTION B: ESSAY QUESTIONS**(30 MARKS)**

- 2) Give a synthesis of the application of photobioreactors and membrane bioreactors in microbial biotechnology. (15 marks)
- 3) Discuss the opportunities that microbial biotechnology has availed to bioremediation. (15 marks)
- 4) Give a review on the secondary metabolites of pharmaceutical importance that can be produced from microbes. (15 marks)
- 5) Critique the ethical and legal issues in biotechnology associated with scientific research, patents and licensing of biotechnology products. (15 marks)

JUST OBSERVES ZERO TOLERANCE EXAM CHEATING