

UNIVERSITY OF ESWATINI
FACULTY OF SCIENCE AND ENGINEERING
DEPARTMENT OF BIOLOGICAL SCIENCES

MAIN EXAMINATION PAPER 2018/2019

- COURSE CODE:** BIO461
- TITLE OF PAPER:** BIOTECHNOLOGY
- TIME ALLOWED:** THREE (3) HOURS
- INSTRUCTIONS:**
1. ANSWER ANY 4 (FOUR) QUESTIONS
 2. EACH QUESTION CARRIES 25 MARKS
 3. USE CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE.

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THE CHIEF INVIGILATOR**

Question 1

- (a) Explain what “recombinant DNA technology” is? (5 marks)
- (b) Discuss industrial, medical and agricultural applications of modern biotechnology (20 marks)

Question 2

Briefly discuss the following:

- (a) DNA vaccines (5 marks)
- (b) Edible vaccines (5 marks)
- (b) Baculovirus expression system (5 marks)
- (c) Phage display technology (5 marks)
- (d) Bioprocessing (5 marks)

Question 3

Discuss enzyme immobilization technology, highlighting its application in industry, medicine and in food production,. (25 marks)

Question 4

Discuss how a transgenic plant can be produced using Agrobacterium-mediated transformation. (25 marks)

Question 5

Discuss the industrial and medical application of fermentation technology. (25 marks)

Question 6

Discuss the different types of intellectual property that is applicable to biotechnology, highlighting how these can be protected. (25 marks)

END OF EXAMINATION PAPER