



NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF AGRICULTURAL SCIENCES
DEPARTMENT OF CROP AND SOIL SCIENCES
SEPTEMBER 2020_1 EXAMINATION

COURSE TITLE: BIOTECHNOLOGY IN CROP/ PEST MANAGEMENT

COURSE CODE: CSP401

CREDIT UNITS: 3

TOTAL SCORE: 70 MARKS

TIME ALLOWED: 1hour 30minutes

INSTRUCTIONS: Answer four questions in all

Question 1 is compulsory (30marks) and any three questions (10marks each)

Q1

- a. What is Biotechnology? (5marks)
- b. Briefly explain any five Basic techniques, which stimulate the progress of modern biotechnology. (10marks)
- c. List any two basic gene delivery systems and explain. (7marks)
- d. State any four advantages of micro propagation. (8marks)

Q2

- a. Explain the meaning of mutations. (3marks)
- b. Discuss constraint on crop production and the overcoming impact of biotechnology. (7marks)

Q3

- a. Briefly discuss two (2) approaches to controlling plant viruses. (4marks)
- b. Highlight the three major genetic traits that are used in breeding programmes: (6marks)

Q4

- a. Discuss the concept of BACTERIAL PATHOGENS in biotechnology of Agriculture. (5marks)
- b. State five ways Herbicide resistance can be prevented or delayed. (5marks)

Q5

- a. Outline the concerns associated with the emergence of herbicide resistant cultivars. (5marks)
- b. Explain in brief the process of Nitrogen fixation by cyanobacteria. (5marks)

Q6

- a. What are five benefits from using bio fertilizers? (5marks)
- b. define nitrification and denitrification. (5marks)

Q7

- a. Define nitrogen fixation. (3marks)
- b. Briefly explain the process of micro propagation. (7marks)