NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS
SCHOOL OF SCIENCE AND TECHNOLOGY
JANUARY/FEBRUARY 2013 EXAMINATION

COURSE TITLE: **BIOTECHNOLOGY IN CROP/PEST MANAGEMENT**

COURSE CODE: **CSP 401** **CREDIT UNIT: 3** **JANUARY, 2013**

TIME ALLOWED: **2 ½ HOURS**

INSTRUCTION: **ANSWER ANY FIVE QUESTIONS**

1 (a). What is biotechnology? 3marks
(b). Discuss conventional and modern biotechnology
8marks
(c). Of what significance is biotechnology in developing countries?
9marks

2. Distinguish between the following pairs of terms:
(i). Totipotency and genetic engineering
4marks
(ii). Construct and Plasmid
4marks
(iii). Transformation and cloning 4marks
(iv). Biolistics and restriction endonucleases
4marks
(v). transgenic line and Transgenic event
4marks

3 (a). Distinguish between mutation and micropropagation.
5marks
(b). Discuss the establishment/initiation and transfer to soil/acclimatization stages of micropropagation.
5marks
(c). Give five advantages and disadvantages each of micropropagation.
5marks
(d). Distinguish between spontaneous and induced mutation.
5marks

4 (a). Discuss concerns over the development of herbicide tolerant crops.
10marks
(b). How has biotechnology been employed in the control of insect pests on crops?
10marks

5 (a). How is nitrogen fixed by cyanobacteria?
6marks
(b). What are biofertilizers and what precautions should be taken in their use?
6marks
(c). How do biofertilizers differ from chemical fertilizers?
8marks

6 (a). What is a genetic marker? 3marks
(b). List 5 commonly used genetic markers. 5marks
(c). Discuss any 3 of the above listed markers.
12marks

7. Discuss biotic and abiotic constraints to crop production that have encouraged the application of biotechnology.
20marks