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Register Number:

Date:

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**OPEN ELECTIVE BIOTECHNOLOGY: II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July 2022)**

**BT OE 2: Sustainable Agriculture and Food Security**

**TIME: 2 hours                             MAX MARKS: 60**

**This paper contains ONE printed page and THREE Parts**

**SECTION A**

**I. Answer any TEN of the following. 10 x 02 = 20**

1. What are green-house gases?
2. List four genetically engineered crops with the traits engineered.
3. What is genetic engineering?
4. What are the major causes of Food insecurity?
5. What is intensive agriculture?
6. What is climate change?
7. What are mycopesticides?
8. What is IOT enabled agriculture?
9. Which are the environmental issues affecting food security?
10. Why biofertilizers are superior to chemical fertilizers?
11. Which organisms are used as biofertilizers?
12. Match the following

(a) Baculovirus (i) nature’s genetic engineer

(b) *Rhizobium* (ii) bacterial biocontrol agent

(c) *Bacillus* *thuringiensis* (iii) root nodule nitrogen fixation

(d) *Agrobacterium* (iv) biopesticides

**SECTION B**

**II. Answer any FOUR of the following. 4 x 05 = 20**

1. Write a note on ‘genetic material’.
2. How does soil health influence food security?
3. What are ‘biofertilizers’? How are they environmentally friendly?
4. Write a note on ‘Bt cotton’
5. Write a note on ‘entrepreneurship in biotechnology’.

**SECTION C**

 **III. Answer any TWO of the following. 2 x 10 = 20**

1. Write a note on ‘plants as biofactories’.
2. What are the advances in the agricultural approaches in the 21st century?
3. Write a note on ‘the role of Biotechnology in sustainable agriculture and food security’

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