

Day: Saturday
Date: 27/04/2019

S-2019-0819

Time: 03.00 P.M. To 06.00 P.M
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.

Q.1 A) Attempt all of the following (MCQ) (06)

- a) _____ are biofertilizers of active strains in free living, non-symbiotic, aerobic type of bacteria.
 - i) Rhizo-fertilizers
 - ii) Mycorrhiza fertilizers
 - iii) Azo – fertilizers
 - iv) Algal biofertilizers
- b) A neem product used as insect repellent.
 - i) Azadirachtin
 - ii) Endrin
 - iii) Rotenone
 - iv) Parathion
- c) A poisonous mushroom among the following is _____.
 - i) *Agaricus biosporus*
 - ii) *Pleurotus species*
 - iii) *Morchella esculenta*
 - iv) *Amanita species*
- d) Hormone pair required for a callus to differentiate are _____.
 - i) Auxin and cytokinin
 - ii) Auxin and ethylene
 - iii) Auxin and abscisic acid
 - iv) Cytokinins and gibberlin
- e) Insecticides generally attack on _____.
 - i) Respiratory system
 - ii) Muscular system
 - iii) Nervous system
 - iv) Circulatory system
- f) An organism that express a transgene is called _____.
 - i) Clone organism
 - ii) Somoclonal organism
 - iii) Mutated organism
 - iv) Transgenic organism

B) Attempt the following: (one sentence / statement / definition) (06)

- a) What are bio-inoculants?
- b) Give definition of spawn?
- c) What is energy plantation?
- d) Give any two advantages of tissue culture?
- e) What is totipotency?
- f) Define non-conventional food.

Q.2 Attempt ANY THREE of the following: (12)

- a) Describe cultivation of *Agaricus* mushroom.
- b) Explain plant propogation by tissue culture.
- c) What is non-conventional food? Comment on its importance.
- d) Comment on culturing of *Rhizobium*.

Q.3 Attempt ANY FOUR of the following: (12)

- a) Explain conversion of biomass into methane production.
- b) Give the need and advantages of energy plantation.
- c) Explain concept of biocontrol.
- d) Explain how nitrogen fixing *BGA* are cultured.
- e) Give the importance of biopesticides.

Q.4 Attempt ANY TWO of the following: (12)

- a) What is neem cake? Give mode of action and their uses.
- b) Give the list of limiting factors for *Spirullina* production.
- c) Enlist agents of biocontrol.

Q.5 Attempt ANY TWO of the following: (12)

- a) What is spawn? Describe method of preparation of spawn in *Agaricus*.
- b) Describe method of culturing *Azatobactor* biofertilizers.
- c) What are biological fuels? Explain their importance.