

SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

[A-16]

**Sardar Patel University**  
**External Theory Examination**  
**Bio- Fertilizers and Bio - Pesticides (PS09CIGIB1)**  
**Saturday, 21<sup>st</sup> April 2018**  
**02:00 pm to 05:00 pm**

Total Marks: 70

- Q.I Multiple choice questions: (08)
- 1 The most quickly available source of nitrogen to plants are \_\_\_\_\_.  
(a) Nitrate fertilizer (c) Ammonium fertilizers  
(b) Amide fertilizers (d) All of these
  - 2 \_\_\_\_\_ are called diazotrophs.  
(a) Nitrogen fixer (c) Both a & b  
(b) Phosphate solubilizers (d) None
  - 3 BGA are used as biofertilizers in \_\_\_\_\_.  
(a) Legume field (c) Wheat field  
(b) Sugercane field (d) Rice field
  - 4 Acetobacter is \_\_\_\_\_ bacteria.  
(a) Aerobic (c) Anaerobic  
(b) Obligative anaerobic (d) Facultative aerobic
  - 5 *Bacillus thuringiensis* produce \_\_\_\_\_.  
(a) Insecticidal Protein (c) Nematicidal Protein  
(b) Fungicidal Protein (d) All of these
  - 6 This treatment is designed to control spores and other forms of pathogens on the surface of seeds.  
(a) Seed Protection (c) Seed Disinfection  
(b) Seed Infection (d) Seed Elimination
  - 7 Mechanism of synergistic means \_\_\_\_\_.  
(a) Preventing of Biodegradation (c) Enhancing the Biodegradation  
(b) Preventing of the detoxification (d) Enhancing the detoxification
  - 8 Which of the following is nematophagus fungus?  
(a) *Beauveria bassiana* (c) *Arthrobotrys oligospora*  
(b) *Fusarium sp.* (d) *Alternaria sp.*

P.T.O

- Q.II**      **Answer the following (Any seven)**      **(14)**
1. Write about soil-plant microbe interaction.
  2. Draw the mechanism of nitrogenase enzyme for N<sub>2</sub> fixation.
  3. Write some valid reasons that why *Pseudomonas* is used as bio-control agent?
  4. Write characteristics of PPLO.
  5. Define Biofertilizers. Write about different types of biofertilizers.
  6. Write significance of *Acetobacter* for agriculture.
  7. What are the key objectives of integral Pest Management?
  8. Write different groups of microbial pesticides with examples.
  9. What are the advantages of Biopesticide?
- Q.III** (a) Outline the process of asymbiotic nitrogen fixation of leguminous plant and *Rhizobium*.      (06)
- (b) Illustrate different mechanism of inorganic and organic phosphate solubilization.      (06)
- OR**
- (b) Give a brief note on regulation system of Biological nitrogen fixation.      (06)
- Q.IV** (a) Write a note on mass production of biofertilizers.      (06)
- (b) What are the applications of *Azolla*? Give an account on *Azolla-Anabaena* symbiosis.      (06)
- OR**
- (b) Discuss any six plant growth promoting activities of microorganisms in detail.      (06)
- Q.V** (a) Explain physiology, mode of action and advantages of *Bacillus popilliae* as biocontrol agent.      (06)
- (b) Write characteristics, mode of action, advantages of *Baculovirus* as pesticide.      (06)
- OR**
- (b) What are the limitations of biopsticides? Write a note on *Bacillus thuringiensis*.      (06)
- Q.VI** (a) Write a note on liquid formulation of Biopesticide.      (06)
- (b) What are the problems of pesticide commercialization? Write a note on compatibility studies of biopesticides.      (06)
- OR**
- (b) Describe different types of solid formulation of biopesticides.      (06)
- X—————