

ANDHRA CHRISTIAN COLLEGE, GUNTUR

DEPARTMENT OF BOTANY

CERTIFICATE COURSE IN BIOFERTILIZERS 2020 – 21

Total hours of Teaching 30 hrs @ 1 per day

**Syllabus:**

Unit I:

Definition, History and Concept, Scope and importance of biofertilizers, Types of biofertilizers, Nitrogen fixation mechanism, Benefits of biofertilizers. 6hrs

Unit II:

Characteristic features of bio-fertilizers; Bacterial biofertilizers - Rhizobium, Azotobacter, Azospirillum; Phosphate solubilizers; Cyanobacterial biofertilizers – Anabaena, Nostoc; Algal biofertilizers – Azolla; Fungal biofertilizers – AM and ectomycorrhiza 10hrs

Unit III:

Production Technology of biofertilizers – Isolation of Azospirillum from roots, Mass production of biofertilizers, Production of BGA in rice crop. 6hrs

Unit IV:

Applications of biofertilizers to crops: Seed treatment, seedling root dip, soil treatment, Use of VAM biofertilizer, blue green algae, and azolla, Precautions to be taken while using biofertilizers. 8hrs

  
Head of the Department of Botany  
ANDHRA CHRISTIAN COLLEGE  
GUNTUR

  
PRINCIPAL  
ANDHRA CHRISTIAN COLLEGE  
(Day, Evening & P.G.)  
GUNTUR

N. Pravalika  
IV section  
class: 901  
NB

30  
30

ANDHRA CHRISTIAN COLLEGE, GUNTUR

Department of Botany – Biofertilizers certificate course

Question Paper- 2020 - 21

Each question carries **two** marks.

Max.marks : 30

1. Which of the following is used as a nitrogen fixer in rice fields?  
a) Frankia    b) Oscillatoria     c) Azospirillum    d) Rhizobium
2. Which of the following is a pair of biofertilizers?  
a) Salmonella and E.coli    b) Rhizobium and grasses    c) Nostoc and legume  
 d) Azolla and BGA
3. Which of the following is not a biofertilizer?  
a) Mycorrhiza    b) Rhizobium     c) Agrobacterium    d) Nostoc
4. Symbiotic Nitrogen fixing Cyanobacteria are not present in  
a) Azolla     b) Gnetum    c) Anthoceros    d) Cycas
5. Conversion of nitrates to nitrogen is called  
a) Ammonification    b) Nitrification    c) Nitrogen fixation     d) Denitrification
6. Anabaena is present in the root pockets of  
a) Marsilea    b) Salvinia    c) Pistia     d) Azolla
7. Root nodule of leguminous plant contains  
a) Nitrogenase    b) leghaemoglobin     c) both    d) none
8. Which of the following is a fern biofertilizer ?  
a) Salvinia     b) Azolla    c) Pteris    d) Marsilea
9. Which of the following is an endomycorrhiza?  
a) Rhizobium    b) Agaricus     c) Glomus    d) Nostoc
10. Which of the following is a non-symbiotic biofertilizer?

- a) VAM  b) Azotobacter c) Anabaena d) Rhizobium

11. Biofertilizers are the living organisms which

- a) Bring about soil nutrient enrichment  
b) maximize the ecological benefits  
c) minimize the environmental hazards  
 d) all the above

12. Phosphate solubilizing bacteria

- a) Azotobacter  b) Pseudomonas putida c) Fusarium d) none of the above

13. The bacteria that are used as biofertilizers for non-leguminous crops are

- a) Azospirillum b) Azotobacter  c) both the above d) none of the above

14) Mycorrhiza is a symbiotic association between

- a) fungus and algae  b) fungus and plant c) fungus and fungus d) fungus and animal

15) Which of these biofertilizers provide phosphorus to the plants?

- a) Oscillatoria b) Rhizobium c) Nostoc  d) Mycorrhiza