

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2023  
(Second Semester)

Branch - APPLIED MICROBIOLOGY

ENVIRONMENTAL & AGRICULTURAL MICROBIOLOGY

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Type of association between *Staphylococcus aureus* and *Aspergillus terreus*.  
(i) antagonism (ii) mutualism  
(iii) parasitism (iv) commensalism
- 2 Which of the following is a waterborne disease?  
(i) Typoid (ii) Cholera  
(iii) Diarrhoea (iv) All the above
- 3 Which bacteria that could clean up oil spills?  
(i) *Bacillus subtilis* (ii) *Pseudomonas putida*  
(iii) *Pseudomonas denitrificans* (iv) *Bacillus denitrificans*
- 4 Which biogeochemical cycles does not have losses due to respiration?  
(i) Sulphur (ii) Nitrogen  
(iii) Phosphorus (iv) All the above
- 5 Which pair has both the microbes that can be used as biofertilizers?  
(i) *Aspergillus* and *Rhizopus* (ii) *Rhizobium* and *Rhizopus*  
(iii) Cyanobacteria and *Rhizobium* (iv) *Aspergillus* and Cyanobacteria

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a) Comment on synergism with suitable examples.  
OR  
b) Describe about species diversity.
- 7 a) List out air born diseases and its causative agents.  
OR  
b) Discuss about MFT test. Add a note on its applications.
- 8 a) Briefly explain bioaccumulation.  
OR  
b) Write short note on biodeterioration.
- 9 a) Discuss about phyllosphere effect.  
OR  
b) Explain symptoms, detection and control measure of red rot of sugarcane.
- 10 a) Differentiate Ectomycorrhizae from Endomycorrhizae.  
OR  
b) Brief about viral bio-control agents of plants.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a) Explain positive interactions with suitable examples.  
OR  
b) Write an essay on microbial aspects of diversity.
- 12 a) How will you assess microbial air quality?  
OR  
b) Elaborate major water born diseases. Add a note on its prevention measure.
- 13 a) Explain solid wastes management with suitable methods.  
OR  
b) Discuss about biodegradation of xenobiotic compounds.
- 14 a) Write an essay on symbiotic nitrogen fixation.  
OR  
b) Describe the pathogen, pathophysiology, symptoms, detection and control measure of black rot of crucifers.
- 15 a) Write a detailed note on mass cultivation and field application of microbial biofertilizers.  
OR  
b) Discuss the general aspects of bio-control agents.

Z-Z-Z END