

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
MSc DEGREE EXAMINATION DECEMBER 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 Which of the following is an example of microbial succession?
 - (i) A virus infecting a host and causing disease
 - (ii) A fungus growing on a dead tree
 - (iii) A bacterium living on the skin of a human
 - (iv) A series of microbial communities colonizing a newly exposed rock surface
- 2 High BOD indicates the status of water is _____
 - (i) Less number of microorganisms
 - (ii) Less polluted water
 - (iii) More polluted water
 - (iv) None of these
- 3 Which process using microbes to convert toxic industrial wastes to less toxic or non-toxic compounds is?
 - (i) Complement fixation
 - (ii) Precipitation
 - (iii) Bioremediation
 - (iv) Bioconversion
- 4 The degradation of complex molecules in soil by fungi for utilization by bacteria is an example of which type of association?
 - (i) Mutualism
 - (ii) Neutralism
 - (iii) Antagonism
 - (iv) Commensalism
- 5 Which of the following elements is required for nitrogen fixation?
 - (i) Carbon
 - (ii) Phosphorus
 - (iii) Oxygen
 - (iv) Silver

SECTION - B (15 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks

(5 x 3 = 15)

- 6 a) Justify the Amensalism produce antagonistic effect.
(OR)
- b) Explain about the species diversity.
- 7 a) Illustrate the microorganisms in fresh water.
(OR)
- b) State the indicator microorganisms.
- 8 a) Discuss about the mechanism of biosorption.
(OR)
- b) Give outline Bio deterioration of Leather.
- 9 a) Determine about the rhizosphere effect.
(OR)
- b) Describe the causative agent, disease cycle and control measures of citrus canker.
- 10 a) Briefly explain about the cultivation, mass production and applications of *Azospirillum* species.
(OR)
- b) Write about the Bio control agent of Baculovirus.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a) Elucidate about the community succession.
(OR)
b) Positive interactions-Explain in detail.
- 12 a) Discuss about the primary treatment process.
(OR)
b) Describe about the activated sludge process.
- 13 a) Elaborate account on Detoxification strategies.
(OR)
b) Write about the Microbial interaction with Xenobiotics compound.
- 14 a) Draw a neat sketch of Nitrogen cycle and explain in detail.
(OR)
b) Give an account on Mycorrhizae.
- 15 a) Write a detail note on Bt toxin.
(OR)
b) Elucidate the mushroom production process.

Z-Z-Z

END