

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)

**BSc DEGREE EXAMINATION DECEMBER 2024**  
(First Semester)

Branch - **BOTANY**

**MICROBIOLOGY**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL questions carry EQUAL marks** (10 × 1 = 10)

| Module No. | Q. No. | Question                                                                                                                                                                                                    | K Level | CO  |
|------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----|
| 1          | 1      | What is microbiology?<br>a. Study of molecules that are visible to human eyes<br>b. Study of animals and their family<br>c. Study of organisms that are not visible to naked eyes<br>d. Study of microscope | K1      | CO1 |
|            | 2      | Who is known as the father of medical microbiology?<br>a. Koch                      c. Jenner<br>b. Pasteur                  d. Tatum                                                                       | K2      | CO2 |
| 2          | 3      | The term virus was coined by -----<br>a. Stanley                  c. Löffler<br>b. Beijerinck              d. Sclesinger                                                                                    | K1      | CO1 |
|            | 4      | TMV particles contain-----<br>a. DNA and Protein      c. Both DNA and RNA<br>b. RNA and Protein      d. DNA only                                                                                            | K2      | CO2 |
| 3          | 5      | Bacteria which can survive in the absence of O <sub>2</sub> are known as -----<br>a. Obligate anaerobes<br>b. Facultative anaerobes<br>c. Obligate anaerobes<br>d. Facultative aerobes                      | K1      | CO1 |
|            | 6      | Pili in bacteria are used for -----<br>a. Asexual reproduction<br>b. Prey hunting<br>c. Locomotion<br>d. Sexual contact                                                                                     | K2      | CO2 |
| 4          | 7      | Cell wall of fungi is made up of -----<br>a. Lipid                      c. Protein<br>b. Cellulose                  d. Chitin and hemicellulose                                                             | K1      | CO1 |
|            | 8      | Yeast is used in the production of -----<br>a. Acetic acid              c. Cheese<br>b. Curd                      d. Ethyl Alcohol                                                                          | K2      | CO2 |
| 5          | 9      | <i>Aspergillus</i> has ----- hyphae.<br>a. Aseptate and uninucleate<br>b. Septate and multinucleate<br>c. Septate and uninucleate<br>d. Septate and multinucleate                                           | K1      | CO1 |
|            | 10     | Lichen is symbiotic relationship between algae and -----<br>a. Mosses                  c. Bacteria<br>b. Fungi                      d. Protozoa                                                             | K2      | CO2 |

Cont...

**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 × 7 = 35)

| Module No. | Question No. | Question                                                                          | K Level | CO  |
|------------|--------------|-----------------------------------------------------------------------------------|---------|-----|
| 1          | 11.a.        | Find out the contributions of Anton Van Leeuwenhoek in the field of microbiology. | K1      | CO1 |
|            | (OR)         |                                                                                   |         |     |
|            | 11.b.        | Tell about the types of culture medium.                                           |         |     |
| 2          | 12.a.        | Explain the general characteristics of viruses.                                   | K2      | CO2 |
|            | (OR)         |                                                                                   |         |     |
|            | 12.b.        | Summarize the reproduction of Bacteriophage.                                      |         |     |
| 3          | 13.a.        | Identify the characteristic features of Bacteria.                                 | K3      | CO3 |
|            | (OR)         |                                                                                   |         |     |
|            | 13.b.        | Experiment with any one type of sexual reproduction in bacteria.                  |         |     |
| 4          | 14.a.        | Simplify the Alexopolous (1962) classification of fungi.                          | K4      | CO4 |
|            | (OR)         |                                                                                   |         |     |
|            | 14.b.        | Analyze the structure of <i>Albugo</i> .                                          |         |     |
| 5          | 15.a.        | Explain the asexual reproduction of <i>Fuvarium</i> .                             | K5      | CO5 |
|            | (OR)         |                                                                                   |         |     |
|            | 15.b.        | Determine the thallus organization of lichens.                                    |         |     |

**SECTION -C (30 Marks)**

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

| Module No. | Question No. | Question                                                                      | K Level | CO  |
|------------|--------------|-------------------------------------------------------------------------------|---------|-----|
| 1          | 16           | Classify the different types of sterilization.                                | K2      | CO2 |
| 2          | 17           | Organize the structure and multiplication of TMV.                             | K3      | CO3 |
| 3          | 18           | Categorize the principle, procedure and observation of differential staining. | K4      | CO4 |
| 4          | 19           | Explain the asexual reproduction of <i>Mucor</i> .                            | K5      | CO5 |
| 5          | 20           | Elaborate a detailed account on sexual reproduction of <i>Alternaria</i> .    | K6      | CO6 |