

**B.Sc. Biochemistry**  
**First Semester**  
**Name of the Paper: Microbiology-I**  
**Paper Code: BBC-03**

Duration: 3 Hrs

Full Marks: 70

**(PART-B: Descriptive)**

Duration: 2 Hrs 40 minutes

Marks : 50

**1. Write brief notes on the following (Any five):**

**2×5=10**

- a) Differential Media
- b) Chemolithotrophs
- c) Acid-Fast Staining
- d) Cledistic Species
- e) Single Cell Isolation
- f) Contribution of Lazzaro Spallanzani
- g) Contribution of Joseph Lister

**2. Answer any four questions from questions:**

**4×5=20**

- a) What is a chemically defined media? Give the composition of such a media you have studied. 2+3=5
- b) Define culture media. Discuss briefly the importance of culture media for cultivation of microbes under laboratory condition. 1+4= 5
- c) Write the basic rules followed in binomial nomenclature of microbes. 5
- d) Define species. Explain briefly the basic rules followed in including an unknown microbe into a particular species. 1+4=5

e) Explain in brief the working principle of fluorescent microscope with a labeled diagram. 3+2=5

f) Explain briefly the differential staining technique developed by Christian Gram. 5

**3. Answer any two questions from the followings: 2×6=12**

a) What do you understand by “Koch postulation”? Discuss the limitation of these postulates. 2+4=6

b) What do you mean by pure culture? Briefly explain the important techniques followed to obtain pure culture of microorganisms. 1+5=6

c) With labeled diagram discuss the structural characteristics of Chlorella.

3+3=6

**4. What is the basis of choosing a preservation technique for preserving microbial cultures? What are the main purposes the preserved cultures should fulfill? Add a brief note on the different methods employed for preservation and maintenance of microbial cultures. 1+2+5=8**

Or

**What is a chemotherapeutic agent? Name some of the important chemotherapeutic agents used for controlling microbial propagules. Explain briefly the working mechanism of such an agent you have studied. 2+2+4=8**

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**B.SC. BIOCHEMISTRY**  
**First Semester**  
**Name of the Paper: Microbiology-I**  
**Paper Code: BBC-03**

**(PART-A: Objective)**

**Duration: 20 minutes**

**Marks - 20**

**Fill in the blanks with appropriate answer:**

**1×20= 20**

1. \_\_\_\_\_ is used to enhance the penetration of stain in Acid-Fast staining technique.
  - i. Targitol
  - ii. Carbol-fuchsin
  - iii. Nigrosin
  - iv. None of the above
  
2. Contact-slide method was developed by \_\_\_\_\_.
  - i. G. Rossi & N. Cholondy
  - ii. Swann & Schleiden
  - iii. Watson & Crick
  - iv. Nelson & cox
  
3. \_\_\_\_\_ is an important structural element of amino acids like *cystin, Cystine and methionin*.
  - i. Sulphur
  - ii. Potassium
  - iii. Phosphorus
  - iv. Magnesium
  
4. Numerical taxonomy was developed by \_\_\_\_\_.
  - i. Michael Adenson
  - ii. Charles Darwin
  - iii. Zaccharias Jensen
  - iv. None of the above
  
5. Soil suspension method was developed by \_\_\_\_\_.
  - i. Warcup
  - ii. Selman Waksman
  - iii. Alexender Flamming
  - iv. S. N. Winogredski

6. The term "biogenesis" was coined by\_\_\_\_\_.
- Louis Pasteur
  - Henry C. Bastian
  - Thomas H. Huxley
  - None of the above
7. Fungi was conferred the rank of a kingdom because of its \_\_\_\_\_ mode of nutrition.
- Parasitic
  - Chemotrophic
  - Saprophytic
  - Coprophagus
8. \_\_\_\_\_ proposed the "Theory of Spontaneous Generation".
- John Needham
  - John Snow
  - Nicolas Apart
  - Lazzaro Sollanzani
9. The binomial nomenclature was first published in C. Linnaeus' \_\_\_\_\_.
- Species Plantarum
  - Systema Naturae
  - Origin of Species
  - Descent of Man
10. Antiseptic method of surgery was introduced by\_\_\_\_\_.
- Joseph Lister
  - Joseph Meister
  - Paul Erlich
  - Emile Roux
11. Streak plate method was pioneered by\_\_\_\_\_.
- Warcup
  - Robert Koch
  - G. Rossi
  - A. Rangaswami
12. The term microscope was coined by
- Giovanni Faber
  - Robert Hooke
  - A.V Leeuwenhoek
  - Charles A. Spancer
13. \_\_\_\_\_ is a differential media for homolytic and non-homolytic bacteria.
- Blood Agar
  - EMB Agar

- iii. Nutrient Agar
  - iv. Cetrimide Agar
14. Fritz Zernike is associated with the development of \_\_\_\_\_.
- i. Phase-contrast Microscope
  - ii. Electron Microscope
  - iii. Dark-field Microscope
  - iv. Fluorescent Microscope
15. \_\_\_\_\_ is a very useful method for preservation of microbial cultures.
- i. Lyophilization
  - ii. Serial dilution
  - iii. Gram's staining
  - iv. Sedimentation
16. In the two kingdom concept of classification, microscopic forms included under the group infusoria w  
\_\_\_\_\_.
- i. Protozoa and Bacteria
  - ii. Protozoa and Algae
  - iii. Algae and Fungi
  - iv. Bacteria and Fungi
17. \_\_\_\_\_ identified blood responsible for "transmission of disease".
- i. Ignaz Sammelweise
  - ii. Louis Pasteur
  - iii. Robert Koch
  - iv. Francesco Redi
18. Temperature employed in "*flush pasteurization*" is \_\_\_\_\_.
- i. 71.7<sup>0</sup> C
  - ii. 82<sup>0</sup> C
  - i. 62.8<sup>0</sup> C
  - ii. 138<sup>0</sup> C
19. Transformation in bacteria was discovered by \_\_\_\_\_.
- i. Fredrick Griffith
  - ii. Carl Woese
  - iii. Earnst Haeckel
  - iv. Avery and McLeod
20. Phagocytosis was discovered by \_\_\_\_\_.
- i. Elie Metchnikoff
  - ii. Chistian Gram
  - iii. Joules Bordet
  - iv. Walter Reed

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