

SEAT No. _____

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SARDAR PATEL UNIVERSITY

B.Sc.(5th SEMESTER) Botany

Subject code - US05CBOT 21

Title - MICROBIOLOGY AND PHYCOLOGY

Date : 24/12/2020

Day: Thursday

Time: 2:00 to 4:00pm

Total Marks: 70

Note : All questions are to be attempted. *Figures to the right indicate marks.

Q. 1	<p>Choose the most appropriate answer.</p> <p>1. Accidental discovery that the fungus <i>Penicillium</i> produces a substance that destroys staphylococci was made by: A) Alexander Fleming B) Ernst Ruska C) Karl Landsteiner D) Niels Jerne</p> <p>2. Flagella helps in: A) Reproduction B) Motility C) both A & B D) None of the above</p> <p>3. Microaerophilic bacteria grow best in presence of: A) High Nitrogen tension B) High oxygen tension C) Low oxygen tension D) None of the above</p> <p>4. Outer layer of Virus is composed of: A) Fats B) Carbohydrates C) Proteins D) Nucleic acid</p> <p>5. Bacteria were first discovered by: A) Robert Koch B) N.D. Zinder C) Robert Hooke D) A.V. Leeuwenhoek</p> <p>6. Bacteria lack: A) Cytoplasm B) Cell membrane C) DNA D) Endoplasmic reticulum</p> <p>7. Cyanobacteria are: A) Photoautotrophs B) Photoheterotrophs C) Chemoautotrophs D) Chemoheterotrophs</p> <p>8. In a cyanophycean cell the nuclear material occurs in: A) Centrioplasm B) Periplasm C) Throughout the cytoplasm D) Nucleus</p> <p>9. Which of the following alga is not found in fresh water? A) Nostoc B) Scytonema C) Trichodesmium D) Oscillatoria</p> <p>10. Motile gametes and zoospores are absent in A) Red algae B) Brown algae C) Blue-green algae D) Green algae</p>	10
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Q. 2	<p>State True or False:</p> <ol style="list-style-type: none">1. Agar is obtained from sea weed.2. Resolving power of electron microscope is 0.1nm.3. Viruses can multiply in dead cells.4. Viruses cannot pass through bacterial filters.5. In blue green algae the pigments are present in definite chromatophores.6. Cyanophyceae store food material in form of oil droplets.7. Brown algae do not contain any chlorophyll.8. The cells of the class Chlorophyceae are typically eukaryotic.	1x8=8
Q. 3	<p>Give brief answer the following questions (Any ten).</p> <ol style="list-style-type: none">1. What are fimbriae?2. What is the principle of Acid fast staining?3. Name various pure culture methods.4. Distinguish between the lysogenic and lytic phages in the life cycle of a virus.5. What are virioids?6. What are prions?7. Name two orders of cyanophyceae which show heterotrichous habit.8. Name two algae which form 'blooms' in water.9. Enumerate economical importance of cyanophyceae.10. What are Akinets?11. What are the various types of spores found in algae.12. What are hormogonia?	20
Q. 4	<p>Answer the following questions (Any Four).</p> <ol style="list-style-type: none">1. What are the various methods of staining bacteria? Explain gram staining in detail.2. Define sterilization. What are the various methods of sterilization? Explain Autoclaving in detail.3. Explain cell wall structures of gram positive and gram negative bacteria in detail.4. What are bacteriophages? Describe their structure with the help of suitable diagrams.5. What are heterocysts? How are they differentiated? Discuss their role in nitrogen fixation.6. Why are the members of blue green algae are known as "Cyanobacteria"? Discuss their general characters in detail.7. Explain the role of algae in agriculture and industry in detail.8. Give an account of the range of thallus organization in algae.	8x4=32

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