

P. P. SAVANI UNIVERSITY

First Semester of B.Sc. Examination
Feb-2022

SSMB1010- Introduction to Microbiology-I

09.02.2022, Wednesday Time: 12:00 p.m. to 02:30 p.m.

Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

Section-I (Total Marks - 30)

Q.1 Short Questions

[10]

1.1 Objectives

[05]

- 1.1a A facultative anaerobic is
- A Only grow anaerobically
 - B Only grow in the presence of O₂
 - C Ordinarily an anaerobe but can grow with O₂
 - D Ordinarily an aerobe but can grow in absence of O₂
- 1.1b Compound microscope was discovered by
- A Antony von
 - B Pasteur
 - C Johnsen & Hans
 - D None of these
- 1.1c Bacteria that are responsible for fermentation of dairy milk are
- A Azetobacter
 - B Rhizobium
 - C Lactobacillus
 - D Hay bacillus
- 1.1d Rod shaped bacteria are known as
- A Cocci
 - B Comma forms
 - C Bacilli
 - D Plemorphic froms
- 1.1e The differences between Gram positive and Gram negative bacteria is shown to reside in the
- A Cell wall
 - B Nucleus
 - C Cell membrane
 - D Mesosomes
- 1.1f Bacterial locomotion is accomplished by
- A Fimbria
 - B Flagella
 - C Cytoskeleton
 - D Both a and b

1.1g Gram negative bacteria appear as

- A Pink
- B Violet
- C both a & b
- D None of these

1.1h The study of algae is known as

- A Phycology
- B Bacteriology
- C Mycology
- D Immunology

1.1i One flagellum at one end of the organ is called –

- A Monotrichate
- B Amphitrichate
- C Iophotrichate
- D Peritrichate

1.1j Who demonstrated that open tube of broth remained free of bacteria when air was free of dust?

- A John Tyndal
- B Paster
- C Francis Reddi
- D Edward Jenner

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]

1.2a Define: Antibiotics

1.2b Who discovered Penicillin antibiotic?

1.2c Asexual reproduction in bacteria by a separation of the body into two new bodies is known as___.

1.2d Crenarchaeota are extremely___. (heat-tolerant/Salt tolerant)

1.2e ___are organisms that obtain energy by the oxidation of electron donors in their environments.(Chemotrophs/Autotrophs)

Q.2 Short Notes (Attempt any two) [06]

- A Discuss different groups of microorganisms.
- B Discuss Spontaneous generation theory.
- C Give general characters of Bacteria.

Q.3 Explain in detail (Attempt any two) [14]

- A Give general characters of Archaeobacteria
- B Classify the bacteria on the basis of shape, spore formation, salt and pH requirement
- C Describe the scope of microbiology in agricultural and Industrial field.

Section-II (Total Marks - 30)

Q.1 Short Questions

[10]

1.1 Objectives

[05]

1.1a All fungi are

- A Heterotrophs and Saprophytes
- B Autotrophs and parasites
- C Parasites and saprophytes
- D None of above

1.1b What is a storage product of most algae?

- A Cellulose
- B Glycogen
- C Starch and oil
- D Fat

1.1c Aflatoxin is produced by

- A Fungi
- B Virus
- C Bacteria
- D None of above

1.1d Agar is part of the cell wall of ____.

- A Chlorophyta
- B Rhodophyta
- C Both of above
- D None of above

1.1e Fungi can be stained by ____.

- A Gram's iodine
- B Lactophenol
- C Safranine
- D Cotton blue

1.1f Red colour of red algae is due to ____.

- A Phycocyanin
- B Xanthophyll
- C Prodigiosin
- D Phycoerythin

1.1g Spores produced from a vegetative mother cell by budding are called ____

- A Conidiospores
- B Blastospores
- C Sporangiospores
- D Chlamyospore

1.1h Fleming discovered Penicillin from

- A *Penicillium notatum*
- B *P. roqueforti*
- C *P. camemberti*
- D *P. chrysogenum*

1.1i Vegetative body of algae is known as

- A Thallus
- B Mycellium
- C Hyphae
- D All of above

1.1j The cell wall of yeast is composed of

- A Chitin
- B Peptidoglycan
- C Cellulose
- D None of above

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]

1.2a Yellow rust is caused by _____. (Algae/ Fungi).

1.2b In Algae, the process of ____ the fusing gametes are developed from the same mother cell and after fusion they form zygote.

1.2c Coenocytic mycelium. Define

1.2d Define. Mycosis

1.2e Tuber like outgrowths are developed due to storage of food at the tip of rhizoids is known as _____.

Q.2 Short Notes (Attempt any two) [06]

- A Write about the Industrial applications of fungi
- B Define hyphae. Explain different types of hyphae present in fungi.
- C Classification of Algae.

Q.3 Explain in detail (Attempt any two) [14]

- A Give Detail on Reproduction in fungi.
- B Explain asexual reproduction in algae.
- C Economic importance of algae.