

[46]

SEAT No. _____

No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY
M. Sc (Int.) Biotechnology: Semester II Examination
Saturday, 23rd March, 2019
Time: 10.00am to 1.00pm
Sub: PS02CIGB04: Microbiology-I

Total Marks: 70

Q-1 Give the answer by choosing appropriate option.

[8 X 1]

- (1) _____ supported the concept of spontaneous generation.
(a) Robert Hook (b) Joseph Lister (c) John Needham (d) None of these
- (2) Following is not found in all bacterial cell.
(a) Cell membrane (b) Ribosome (c) Endospore (d) All of these
- (3) _____ insisted that puerperal fever was contagious.
(a) Oliver Wendell Holmes (b) Robert Koch
(c) Louis Pasteur (d) All of these
- (4) Iodine is used as a _____ in Gram's staining.
(a) Stain (b) Decolourizer (c) Mordant (d) None of these
- (5) Scanning electron microscopy is best used to study
(a) Small internal cell structures (b) Surface morphology
(c) Both a and b (d) None of these
- (6) Which of the following is an example of acidic dye.
(a) Methylene blue (b) Nigrosine (c) Saffranine (d) All of these
- (7) Following cryoprotective agent is added during storage of cells at low temperature.
(a) DMSO (b) Acid alcohol (c) Propanol (d) All of these
- (8) _____ method cannot be used for the isolation of heat sensitive bacteria.
(a) Four flame method (b) Spread plate method
(c) Pour plate method (d) All of these

Q-2 Answer the following questions in short. (Any seven)

[7 X 2]

- (1) Enlist types of flagella based on arrangement.
- (2) List the contribution of Pasteur in fermentation.
- (3) Explain Koch's postulates.
- (4) Write the functions of pilli.
- (5) Write advantages of electron microscopy.
- (6) Write principle of phase contrast microscopy.

- (7) What is the role of decolourizer in staining? Give examples.
- (8) Give examples of gram positive and negative bacteria.
- (9) Define: chemolithotrophs. Give its suitable example.
- Q-3 (a) Briefly discuss the spontaneous generation controversy with the help of appropriate experiments. [06]
- (b) Write a brief note on germ theory of disease. [06]
- OR
- (b) Describe the development in the field of molecular biology. [06]
- Q-4 (a) Describe the Gram negative bacterial cell wall in detail. [06]
- (b) Explain ultrastructure of flagella and its hydrodynamics. [06]
- OR
- (b) Discuss the sporulation and germination process of endospore. [06]
- Q-5 (a) What is differential staining? Describe the method of Gram's staining in brief. [06]
- (b) Briefly explain specimen preparation and applications of SEM. [06]
- OR
- (b) Write a short note on fluorescence microscopy. [06]
- Q-6 (a) Enlist the methods for the isolation of bacteria. Explain any two. [06]
- (b) Give an account on nutritional requirement of bacteria. [06]
- OR
- (b) Discuss the techniques used for the preservation and maintenance of pure culture. [06]

*****X*****

(2)