

F.Y.B.SC. SEM – I (CBCS - 2016 COURSE) : SUMMER - 2018

SUBJECT : MICROBIOLOGY : INTRODUCTION TO MICROBIOLOGY

Day: Wednesday
Date: 18/04/2018

S-2018-0621

Time: 11.00 A.M. TO 02.00 PM
Max. Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.

Q.1 A) Attempt all of the following: [06]

a) _____ is the ability to reveal closely adjacent points as separate and distinct.

- i) Magnification
- ii) Resolution
- iii) Numerical aperture
- iv) None of the above.

b) From the following _____ is referred as differential staining [06]
technique.

- i) Monochrome staining
- ii) Gram staining
- iii) Lacto phenol cotton blue staining
- iv) All of the above

c) Basic unit of bacterial measurement is _____ [06]

- i) Micrometer
- ii) Nanometer
- iii) Millimeter
- iv) All of the above

d) The purpose of swan-necked flask that Louis Pasteur designed to [06]
disprove spontaneous generation is to _____

- i) Allow the multiplication of microbes in the broth.
- ii) Implicate the role of flies in the development of maggots on rotting meat.
- iii) Pasteurize the meat broth.
- iv) Trap the microbes and prevent them from reaching the broth.

e) What was the first bacterium known to cause human disease? [06]

- i) Anthrax bacillus
- ii) Mycobacteria
- iii) Diphtheria bacillus
- iv) Streptococci

P.T.O.

- f) Microbes live in us, on us and nearly everywhere around us. Which of the following activities are microbes involved in?
- i) Decomposing dead organisms
 - ii) Aiding the digestive processes of grazing animals
 - iii) Capturing energy from the sun
 - iv) All of the above

B) Define: [06]

- i) Stain
- ii) Fixative
- iii) Basic dye
- iv) Microscope
- v) Covalent bond
- vi) pH

Q.2 Attempt **ANY THREE** of the following: [12]

- a) Enlist the contributions in the field of ecology in the golden age of microbiology.
- b) Why is sewage treatment essential?
- c) Explain Redi's experiment.
- d) Explain any one method of spore staining.

Q.3 Attempt **ANY FOUR** of the following: [12]

- a) What is bioremediation?
- b) Draw general structure of an amino acid. Name its functional groups.
- c) Give principle and applications of phase contrast microscopy.
- d) What are ionic bonds? Give example.
- e) Enlist emerging infectious diseases.

Q.4 Attempt **ANY TWO** of the following: [12]

- a) Give contributions of Robert Koch to Microbiology.
- b) Differentiate between Gram staining and Acid fast staining
- c) Describe exchange reactions with suitable example.

Q.5 Attempt **ANY TWO** of the following: [12]

- a) What are proteins? Give their functions.
- b) Enlist general characters of Algae.
- c) Discuss the significance of normal microbiota in human health.

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