

F.Y.B.SC. SEM – I (CBCS - 2016 Course) : SUMMER - 2019
SUBJECT: MICROBIOLOGY: INTRODUCTION TO MICROBIOLOGY

Day: Monday
Date: 15/04/2019

S-2019-0800

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 labeled diagram **WHEREVER** necessary.
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Q.1 A) Attempt the following: (06)

- 1) The helical structure of DNA was discovered by:
 - a) Edward Tatum
 - b) Elle Metchnikoff
 - c) James Watson and Francis Crick
 - d) Oswald Avery, Maclyn McCarty and Colin McLeod
- 2) Who developed postulates to demonstrate that microorganisms caused disease?
 - a) Semmelweis
 - b) Metchnikoff
 - c) Koch
 - d) Nightingale
- 3) Bacteriophages are:
 - a) Modified antibiotics that were used in the Soviet Union.
 - b) Viruses that attack and kill specific kinds of bacteria including antibiotic resistant bacteria.
 - c) Used to introduce genes in gene therapy.
 - d) Some of the genes in the human genome.
- 4) The concept of putting microbes to work to clean up the environment is called:
 - a) Bioremediation
 - b) Pasteurization
 - c) Immunization
 - d) Fermentation
- 5) A 40X objective and a 10X ocular produce a total magnification of.
 - a) 50
 - b) 400
 - c) 90
 - d) 100
- 6) What is the correct order of chemicals used a gram staining procedure?
 - a) Iodine, ethanol, crystal violet, safranin
 - b) Crystal violet, iodine, ethanol, safranin
 - c) Crystal violet, ethanol, iodine, safranin
 - d) Safranin, ethanol, iodine, crystal violet

B) Define/ Give the important contribution of the scientist. (06)

- i) Emerging infectious diseases
- ii) Robert Hooke
- iii) Covalent bonds
- iv) Exchange reactions
- v) Mordant
- vi) Magnification

P. T. O.

Q.2 Attempt any **THREE** of the following: (12)

- a) Name the parts of the microscope on the stage and give their functions.
- b) Why are proteins important to a cell?
- c) Give the importance of microbes in human welfare.
- d) Name any four Nobel laureates in the field of microbiology and enlist their contributions.

Q.3 Attempt any **FOUR** of the following: (12)

- a) What is Pasteurization? How is it carried out?
- b) Give the role of microbes in recycling of vital elements.
- c) Give the basic structure of carbohydrate.
- d) Give the important properties and functions of salts.
- e) Give the principle and applications of fluorescence microscope.

Q.4 Answer any **TWO** of the following: (12)

- a) What is the difference between a Transmission electron microscope and a Scanning electron microscope?
- b) With the help of suitable diagram explain spore staining.
- c) Draw structure of ATP and GTP.

Q.5 Answer any **TWO** of the following: (12)

- a) Explain the procedure of staining metachromatic granules.
- b) What are pyrimidines? Explain with the help of a suitable diagram.
- c) Why are Antony Van Leeuwenhock's contributions important to the field of Microbiology?

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