

SEAT No. _____

No. of Printed Pages: 02

[11/A-6]

Sardar Patel University
B.Sc Biotechnology Fourth Semester
Saturday, 21st April 2018
10:00 am to 12:00 pm
US04EMIC01 (Fundamental Microbiology)

Total Marks: 70

Note:

- 1) Figures to the rights indicate marks
- 2) Draw neat and labeled diagram wherever necessary

Q.1 Multiple Choice Questions

[10]

- 1) In Whittaker's five kingdom concept, cyanobacteria is included in _____ kingdom.
 - a. Monera
 - b. Protista
 - c. Plantae
 - d. Fungi
- 2) In Bergey's Manual of systematic bacteriology, prokaryotes that lack cell wall are placed in _____ division.
 - a. Gracilicutes
 - b. Tenericutes
 - c. Firmicutes
 - d. Mendosicutes
- 3) _____ when present within bacterial cells can give special characteristics to resistant to various antibiotics.
 - a. Flagella
 - b. Plasmid
 - c. Pili
 - d. Gas vacuoles
- 4) In 1912, _____ scientist at Pasteur institute raised 17 germfree chickens for 40 days.
 - a. Pasteur
 - b. Joseph Lister
 - c. Cohendy
 - d. Robert Koch
- 5) _____ Organism is responsible for causative agent of dental caries.
 - a. *Streptococcus mutans*
 - b. *Streptomyces griseus*
 - c. *Staphylococcus aureus*
 - d. *Candida spp*
- 6) _____ Genera can adhere firmly to epithelial tissue of the respiratory tract and produce toxic by products like hydrogen peroxide.
 - a. Mycoplasma
 - b. Both (a) and (b)
 - c. Ureaplasma
 - d. None of these.
- 7) Liquid nitrogen at a _____ temperature is used for preserving culture of many viruses and microorganisms.
 - a. -176°C
 - b. -196°C
 - c. -186°C
 - d. -166°C
- 8) Seitz filter is made up of _____ materials.
 - a. Porcelain
 - b. Gelatin
 - c. Agarose
 - d. Asbestos

P.T.O.

- 9) _____ Chemical agent is effective against bacterial and fungal spores.
- | | |
|-------------------|-------------------|
| a. Alcohol | c. Glutaraldehyde |
| b. Ethylene oxide | d. All of above |
- 10) Inhibition of cellwall synthesis is mode of action in _____ antibiotic.
- | | |
|-----------------|------------------|
| a. Streptomycin | c. Tetracyclines |
| b. Erythomycin | d. Pencillin |

Q.2 Answer the following questions (Attempt any TEN) [20]

- 1) Justify reason for 3rd kingdom concept given by Haeckel.
- 2) Which group of prokaryotes were included in division Gracilicutes?
- 3) List out microorganisms found as normal flora in Genitourinary tract.
- 4) Define: Septicemia and Bacteraemia.
- 5) Mention factors responsible for discouraging skin colonization.
- 6) Define: Thermal death time and Decimal Reduction time.
- 7) What is Pasteurization? Give its significance.
- 8) On what principal does autoclave work? Give its uses.
- 9) Write a mode of action of Heavy metals.
- 10) Give practical applications of Quaternary ammonium compounds.
- 11) Define: Disinfectant and Sanitizer
- 12) What are Siderophores? Give its importance.

Q.3 Enlist and discuss in brief criteria used for classification of Bacteria. [10]

OR

- Q.3 a) In which year Whittaker's five kingdom concept was introduced? Give a detail note on it. [05]**
- b) Elaborate on Bergey's Manual of systematic classification. [05]**

Q.4 a) What is Gnotobiotic life? Write a detail note on it. [06]

b) Depict on Upper Respiratory tract and its normal flora. [04]

OR

Q.4 a) Describe about Infection and its types. [06]

b) Distinguish between Exotoxins and Endotoxins. [04]

Q.5 Describe the role of Radiation used to control microorganisms in detail. [10]

OR

Q.5 a) Write a note on Filtration used as physical antimicrobial agents. [05]

b) Enlist and discuss in brief about factors affecting antimicrobial action. [05]

Q.6 a) Give a brief account on Alcohols used as antimicrobial agent. [06]

b) Write mode of action and practical applications of phenolic compounds. [04]

OR

Q.6 a) Enlist and explain in brief ideal characteristics of antimicrobial chemical agents. [06]

b) Discuss on Formaldehyde used as antimicrobial agent. [04]

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