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B. Sc. Examination Semester – III

Microbiology – US03CMIC22

Microbial Physiology

Date : 18-6-2022

Time : 12:00 pm to 2:00 pm

Day : Saturday

Total Marks : 70

## Q.1 Multiple Choice Questions (01- mark each)

10

- 1 EMB agar medium is \_\_\_\_\_  
 (a) Differential (b) Selective  
 (c) Both (a) & (b) (d) none of these
- 2 Microorganisms having optimum temperature of growth above 4 °C are called \_\_\_\_\_  
 (a) Psychrophiles (b) Mesophiles  
 (c) Facultative mesophiles (d) Thermophiles
- 3 These organisms can use CO<sub>2</sub> as sole source of carbon, they are termed  
 (a) Autotrophs (b) Chemotrophs  
 (c) Heterotrophs (d) Phototrophs
- 4 A single isolation in pure culture comprise a \_\_\_\_\_  
 (a) Strain (b) Colony  
 (c) Both (a) & (b) (d) Culture
- 5 The most common method of reproduction of bacteria is \_\_\_\_\_  
 (a) Binary fission (b) Fragmentation  
 (c) Both (a) & (b) (d) Budding
- 6 Which of the following is not a method of sterilization  
 (a) Steam under pressure (b) Tyndallisation  
 (c) Freezing (d) Autoclave
- 7 Which of the following are the example of ionizing radiation?  
 (a) X ray (b) Gamma ray  
 (c) Both (a) & (b) (d) U.V. ray
- 8 Moist heat kills microorganisms by \_\_\_\_\_  
 (a) Oxidation proteins (b) Breaking down lipids  
 (c) Coagulation of proteins (d) Destroying cell walls
- 9 Which of the following concentration of alcohol is having bacteriostatic effect?  
 (a) 95% (b) 60%  
 (c) 80% (d) 70%
- 10 \_\_\_\_\_ is having more antimicrobial effect on algae and molds than bacteria.  
 (a) HgCl<sub>2</sub> (b) CuSO<sub>4</sub>  
 (c) AgNO<sub>3</sub> (d) All of these

**Q.2 (A) Fill in the blanks.**

04

1. \_\_\_\_\_ is the solidifying agent. (Gelatine , Peptone)
2. The time required for the population to double is referred as \_\_\_\_\_ (Generation time, Generations)
3. \_\_\_\_\_ used phenol to decrease infection of surgical incision and wounds. (Joseph lister, Robert Koch).
4. Cold sterilization is done by \_\_\_\_\_ ( U.V ray, Gamma ray).

**Q.2 (B) State if the given statements are true or false.**

04

1. Viable cell count is to determine the number of non-living cells.
2. U.V ray is the example of ionizing radiation.
3. Nutrient agar medium use as selective for gram negative bacteria.
4. Triphenylmethane dyes inhibits gram negative bacteria.

**Q.3 Gives short answers to the following Questions. (Any Ten)**

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1. Define Thermophiles.
2. Explain about enriched media.
3. Give chemical composition of Mac Conkey's agar medium.
4. What is viable cell count? Give the name of different techniques used for viable cell count.
5. Define continuous growth.
6. Give suitable example of selective and differential medium.
7. Write on use of low temperature as an antimicrobial agent.
8. Write down mode of action of alcohols.
9. Describe in short Pasteurization.
10. Write down practical application of Phenol and Phenolic compound.
11. Write down mode of action of Heavy metals
12. What is SPC? Write its application.

**Q.4 Attempt any four :**

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1. Define pure culture. Discuss various methods in detail isolation of pure culture.
2. Explain brief various nutritional types of bacteria.
3. Define growth. Explain in brief normal growth curve of bacteria.
4. Write a short note on Synchronous growth and Diauxic growth.
5. Write in detail the role of high temperature in controlling microbial growth.
6. Write in detail the role of radiation and filtration in controlling microbial growth.
7. Write down the mode of action of Penicillin and Streptomycin.
8. Explain in detail Gaseous agent as controlling microbial agent.