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SARDAR PATEL UNIVERSITY
B.Sc.(4th Semester) EXAMINATION 2016
Wednesday, April 6th, 2016
10:30 a.m. TO 1:30 p.m.
SUBJECT: MICROBIOLOGY US04CMIC01
(General Microbiology)

TOTAL MARKS: 70

- Note: (1) All the questions are compulsory.
(2) Figures on the right indicate marks.

Q-1 Select the correct answer for each question from the option given below [10]

1. Which of the following has largest microbial population in human body?
(A) Skin (B) Large intestine (C) Eye (D) Stomach
2. The stomach usually contains a very low count of bacteria due to _____.
(A) Neutral pH (B) High pH (C) Low pH (D) Inhibitory action of bile
3. Evaporation of droplets in warm, dry climate results in to
(A) Spore nuclei (B) Droplet nuclei (C) Infectious nuclei (D) Air nuclei
4. _____ prevent vortex formation during fermentation.
(A) Sparger (B) Stirrer gland (C) Agitator (D) Baffles
5. The time in minutes required to reduce the microbial population by 90% is known as _____.
(A) Thermal Death Time (B) Thermal Death Point
(C) Generation Time (D) Decimal Reduction Time
6. Which of the following is the method of sterilization and NOT disinfection?
(A) Steam under pressure (B) Pasteurization (C) Boiling water (D) None of these
7. Which antimicrobial agent is associated with inactivation of enzymes by specifically binding with sulfhydryl group of protein?
(A) Mercury (B) Chlorine (C) Acridine dyes (D) Phenol
8. An agent which kills growing forms of disease producing microorganism is known as _____.
(A) Disinfectant (B) Antiseptic (C) Sanitizer (D) Sterilizer
9. Which of the following radioactive isotope is used for the emission of γ -radiation?
(A) ^{14}C (B) ^{63}Ni (C) ^{15}N (D) ^{60}Co
10. Which of the following antimicrobial agent is used to sterilize space air craft components?
(A) Methanol (B) Ethanol (C) Propanol (D) Ethylene oxide

Q-2 Give Short answers to following questions (Any ten) [20]

- [1] Lower respiratory track do not have normal flora. Comment on this statement.
- [2] Give at least four differences between endotoxin and exotoxin.
- [3] Which organism is responsible for dental caries? How?
- [4] Air is not a natural environment for growth and reproduction of microorganisms. Justify
- [5] Enlist at least four characteristics of industrially important microorganisms

- [6] Define (1) Droplet (2) Droplet nuclei.
- [7] Define (1) Thermal Death Point (2) Thermal Death Time
- [8] What is HEPA? How it is useful in microbiology laboratory?
- [9] How microorganisms are affected by subzero temperature?
- [10] Define (1) Sanitizer (2) Antiseptic
- [11] What relationship exist between various concentration of ethyl alcohol and higher alcohols?
- [12] Give examples of selective inhibition of dyes on microorganisms. What is the use of such dyes in bacteriological media?

Q-3 Define gnotobiotic life? Discuss in detail about process of rearing germ free animals with their uses. [10]

OR

Q-3 (A) Write a note on- Normal flora of skin [05]
 (B) What do you mean by natural resistance? Discuss about racial resistance and individual resistance in detail. [05]

Q-4 (A) Write a note on- Control of air borne microorganisms. [04]

Q-4 (B) Enlist various methods to enumerate air microflora and discuss about impingement in liquid and impaction on solid method in detail. [06]

OR

Q-4 (A) Explain basic design of fermenter with neat and labeled diagram. [05]

Q-4 (B) Write a note on- Significance of microflora in air [05]

Q-5 Differentiate between ionizing and non ionizing radiation and discuss in detail their role as an antimicrobial agent. [10]

OR

Q-5 Justify- Moist heat is better than dry heat. Discuss the role of temperature as an antimicrobial agent. [10]

Q-6 (A) Write a note on-Phenol coefficient test [05]

(B) Write a note on-Gaseous antimicrobial agent [05]

OR

Q-6 Discuss practical applications and mode of action of (1) Heavy metals [05]

(2) Halogen compounds [05]

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