RAN-2103001103030005

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**A**

## B. Sc. (Microbiology) (A.T.K.T.) (Sem. - III) Examination

## March - 2023

## Microbiology : MB302

## Control of Microorganisms in the Environment

**[ Total Marks: 50**

**સૂચના : / Instructions**

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
**Fill up strictly the details of ☛ signs on your answer book**

Name of the Examination:

☛ **B. Sc. (Microbiology) (A.T.K.T.) (Sem. - III)**

Name of the Subject :

☛ **Microbiology : MB302 Control of Microorganisms in the Environment**

Subject Code No.: **2103001103030005**

Seat No.:

Student's Signature

(2) This exam contains 50 multiple choice questions, each worth 1 mark.

(3) All questions are compulsory.

***O.M.R. Sheet* ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ *O.M.R. Sheet*ની પાછળ છાપેલ છે.**
***Important instructions to fillup O.M.R. Sheet are given on back side of the provided O.M.R. Sheet.***

**SET - I**

**Q. 1.** Among the following which is the most effective method of killing microorganisms?

A. High temperature
B. Low temperature
C. High temperature, high moisture
D. Low temperature, low moisture

**Q. 2.** Which of the following instrument uses steam under pressure to sterilize the material?

A. Hot Air Oven
B. Autoclave
C. Water bath
D. UV cabinet

**Q. 3.** _____ is the killing, inhibition, or removal of microorganisms that may cause disease; and it causes substantial reduction of the total microbial population and the destruction of potential pathogens.

A. Sterilization
B. Disinfection
C. Sanitization
D. Antisepsis

**Q. 4.** Use of chemical agents to kill or inhibit the growth of microorganisms within host tissue is referred as _____.

A. Chemotherapy
B. Radiotherapy
C. Immunotherapy
D. Surgery

**Q. 5.** Gaseous chemical agents can be used for

A. Sterilization only
B. Disinfection only
C. Chemotherapy
D. Sterilization & disinfection

**Q. 6.** Which of the following method involves the complete removal or destruction of all viable microorganisms including spores?

A. Antisepsis
B. Disinfection
C. Sterilization
D. Sanitization

**Q. 7.** Which of the following are the physical agents used for sterilization?

A. Dry heat
B. Ionizing radiations
C. Moist heat
D. All of these

**Q. 8.** Which of the following is based on mechanical method for microbial control?

A. Ethylene Oxide
B. Membrane Filters
C. Phenolics
D. Glutaraldehyde

**Q. 9.** The substance or agent which causes inhibition of the growth of fungal cells is referred as _____.

A. Bacteriostatic
B. Fungistatic
C. Bactericidal
D. Fungicidal

**Q. 10.** The substance or agent which has a killing effect on bacterial cells is referred as _____.

A. Bactericidal
B. Fungicidal
C. Viricidal
D. Bacteriostatic

**Q. 11.** The time required to kill 90% of the bacterial population under specific condition is called _____.

A. Z value
B. D value
C. B value
D. C value

**Q. 12.** Which of the following is not correct for environmental conditions and death rates of microbicidal agent?

A. Dirt, grease and body fluids can interfere with the heat penetration.
B. Dirt, grease and body fluids can interfere with the action of chemical disinfectants.
C. Temperature and pH influence the microbial death rates of antimicrobial agents.
D. Sodium hypochlorite solution is even more effective at a high pH.

**Q. 13.** Which of the following comes under the category of Critical instruments?

A. Stethoscopes
B. Needle and scalpel
C. Gastrointestinal endoscopes
D. Blood pressure cuffs

**Q. 14.** Which of the following category of medical instruments must be sterile before use?

A. Non-critical instruments
B. Semi-critical instruments
C. Critical instruments
D. None of these

**Q. 15.** Which of the following can most reliably be used as a sterilant?

A. Alcohol
B. Iodine
C. Phenolic compounds
D. Ethylene oxide gas

**Q. 16.** UV light kills bacteria by

A. Damaging DNA
B. Generating heat
C. Damaging cell walls
D. Damaging cell membrane

**Q. 17.** Which of the following is most resistant to destruction by chemicals and heat?

A. Fungal spores
B. Bacterial endospores
C. *E. coli*
D. *M. tuberculosis*

**Q. 18.** Unlike a disinfectant, an antiseptic

A. Sanitizes objects rather than sterilizes them.
B. Requires heat to be effective
C. Is non-toxic enough to be used on human skin.
D. Destroys all microorganisms.

**Q. 19.** HEPA stands for

A. High Efficiency Particulate Air
B. High Efficiency Provisional Air
C. Highly Efficient Particulate Agent
D. Highly Effective Particle Agent

**Q. 20.** What is the pore size of HEPA filter?

A. 0.50 μm
B. 0.45 μm
C. 0.33 μm
D. 1 μm

**Q. 21.** Depth filters are generally used for filtration of

A. Blood
B. Water
C. Media
D. Air

**Q. 22.** Cold sterilization refers to the use of _____ for sterilization.

A. Hot air
B. Steam under pressure
C. Radiations
D. Phenolics

**Q. 23.** Which of the following is not used to preserve food?

A. High concentrations of sugar.
B. High concentrations of salt.
C. Benzoic acid.
D. Ethylene oxide.

**Q. 24.** Which of the following includes intermittent heat sterilization?

A. Pasteurization
B. Tyndallization
C. Autoclaving
D. Hot Air sterilization

**Q. 25.** Gamma rays for sterilization is obtained from a _____ based light source.

A. Cobalt 60
B. Mercury
C. Tungsten
D. Deutarium

**Q. 26.** Which of the following kills the microbial cell by disrupting cell membrane?

A. Halogens
B. Aldehydes
C. Cationic detergents
D. Heavy metals

**Q. 27.** Which of the following is used to control the growth of algae in swimming pools?

A. Methylene blue
B. Copper nitrate
C. Ferrous sulphate
D. Copper sulphate

**Q. 28.** Which of the following is a cationic detergent?

A. Tween-80
B. Triton X 100
C. Sodium Dodecyl Sulphate
D. Cetyltrimethylammonium bromide

**Q. 29.** Which of the following is highly effective sterilant at 2% concentration for treating heat-sensitive medical devices?

A. Alkaline glutaraldehyde
B. Ethanol
C. Iso-propanol
D. Sodium hypochlorite

**Q. 30.** Which of the following is used at low levels to disinfect drinking water?

A. Iodine
B. Chlorine
C. Ethanol
D. Copper sulphate

**Q. 31.** If you wish to develop a deodorant soap, which of the following can be included to kill microorganisms?

A. Sodium hypochlorite
B. Glutaraldehyde
C. Triclosan
D. Hydrogen peroxide

**Q. 32.** Which of the following is economical, effective and safe for disinfection of food preparation surfaces?

A. Phenolics
B. Gamma radiations
C. Quats
D. Alcohol

**Q. 33.** Which of the following is/are gaseous agent for microbial control?

A. Ethylene oxide
B. Chlorine dioxide
C. Vaporized hydrogen peroxide
D. All of these

**Q. 34.** Which of the following is used as surface sterilizing agent for isolation of endophytic bacteria from plant parts?

A. Phenolics
B. Formaldehyde
C. Ethylene oxide
D. Mercuric chloride

**Q. 35.** Least concentration of an antimicrobial agent that inhibits the visible growth of test bacterium is called as _____.

A. Minimum Inhibitory Concentration
B. Minimum Lethal Concentration
C. Growth Inhibitory Concentration
D. Maximum Inhibitory Concentration

**Q. 36.** Plasmolysis is

A. Shrinkage of cells when placed in hypotonic solution
B. Shrinkage of cells when placed in hypertonic solution
C. Swelling of cells when placed in hypotonic solution
D. Swelling of cells when placed in hypertonic solution

**Q. 37.** The presence of _____ can dramatically affect the effectiveness of antimicrobial agent.

A. Single cell
B. Biofilm
C. Capsid
D. Cell wall

**Q. 38.** In _____ , iodine is linked to a carrier molecule that releases free iodine slowly.

A. Chromophore
B. Chlorophore
C. Iodophore
D. Fluorophore

**Q. 39.** _____ is used to decontaminate enclosed spaces such as safety cabinets and small rooms.

A. Hydrogen peroxide
B. Vaporized hydrogen peroxide
C. Glutaraldehyde
D. Ethylene oxide

**Q. 40.** Which of the following can be used for disinfection of drinking water?

A. Oxygen
B. Ozone
C. Hydrogen peroxide
D. Formaldehyde

**Q. 41.** Heavy metals mostly react with _____ groups of proteins to denature them.

A. Amino groups
B. Sulfhydryl groups
C. Alkyl group
D. Carboxyl group

**Q. 42.** Aldehydes exert their antimicrobial activity by

A. Oxidation of lipids
B. Oxidation of proteins
C. Oxidation of carbohydrates
D. Alkylation of DNA

**Q. 43.** Phenol exerts its antimicrobial effect by

A. Denaturing proteins and disrupting cell membrane
B. Disrupting cell wall
C. Oxidizing lipids
D. Denaturing DNA

**Q. 44.** _____ is frequently used to evaluate the effectiveness of antimicrobial agents.

A. Phenol concentration test
B. Phenol coefficient test
C. Alcohol coefficient test
D. Alcohol concentration test

**Q. 45.** Which of the following is not effective on spores?

A. Steam under pressure
B. Glutaraldehyde
C. Alcohol
D. Ethylene oxide

**Q. 46.** Crystal violet dye is included in MacConkey's agar medium to inhibit the growth of _____.

A. Gram negative bacteria
B. Gram positive bacteria
C. Capsulated bacteria
D. Acid-fast bacteria

**Q. 47.** Detergents are considered as

A. Low level germicides
B. High level germicides
C. Antiseptics
D. Sterilants

**Q. 48.** Which of the following is often referred as household bleach?

A. Sodium chloride
B. Sodium carbonate
C. Sodium hypochlorite
D. Sodium bicarbonate

**Q. 49.** SDS is a

A. Cationic detergent
B. Anionic detergent
C. Neutral detergent
D. SDS is not a detergent

**Q. 50.** Hydrogen peroxide inhibits the growth of bacteria by

A. Generating ROS
B. Denaturing cell wall
C. Solubilizing cell membrane lipids
D. Creating pores in cell membrane

_____

**SPACE FOR ROUGH WORK**