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GCP-1226 Seat No._____

B. Sc. (Sem. II) Examination

April / May - 2017

Microbiology : MB - 02

(Fundamentals of Bacteriology)

(Core Course)

Time : **3** Hours] [Total Marks : **70**

1 Answer the following MCQs : **35**

(1) The microbes for which oxygen is toxic are known as

(A) Obligate Anaerobes

(B) Aerobes

(C) Saprophytes

(D) Halophiles

(2) The part of bacteria that carries genetic information is

(A) Nucleus (B) Cytoplasm

(C) Cell wall (D) Cell membrane

(3) Autotrophs are the organisms that require one of the following as source of carbon -

(A) NO_2 (B) CO_2

(C) H_2O (D) PO_4

(4) The structure of bacteria that can make it motile is _____

(A) Spore
(B) Cell wall
(C) Pilli
(D) Flagella

(5) An ideal antimicrobial agent should possess _____

(A) Pathogenicity
(B) Immunogenicity
(C) Selective toxicity
(D) Growth promotivity

(6) Osmotic Pressure can be used as _____ agent for microbial control.

(A) Biological
(B) Chemical
(C) Physical

(7) The _____ aids in attachment of bacteria for conjugation.

(A) Cell wall
(B) Cytoplasmic membrane
(C) Pilli
(D) Spore

(8) The most common method of cell division in bacteria is

(A) Conjugation
(B) Replication
(C) Binary Fission
(D) Fragmentation

(9) The bacteria that grow on inorganic substances as a source of electron donors are

(A) Organotrophs (B) Phototrophs

(C) Lithotrophs (D) Autotrophs

(10) The size of bacteria can be best measured in _____ unit.

(A) Nanometer (B) Micrometer

(C) Decimeter (D) Centimeter

(11) Membrane filtration should be employed for sterilization of _____ material.

(A) Heat labile (B) Heat tolerant

(C) Heat stable (D) Heat variable

(12) The concept of 'Five Kingdom system' was first proposed by _____.

(A) C. Linnaeus (B) R.H. Whittaker

(C) Robert Koch (D) E.H. Haeckel

(13) Which of the following proteins is present in Bacterial Flagella?

(A) Glycoprotein (B) Lipoprotein

(C) Flagellin (D) Keratin

(14) The cell wall of _____ bacteria contain Techoic acids.

(A) Gram negative

(B) Gram positive

(C) Gram variable

(15) Heat resistant property of bacterial endospore is due to _____.

(A) Absence of water

(B) Tough outercover

(C) Dipicolinic acid

(D) All of the above

(16) Which of the following is an arrangement observed among bacterial cells ?

(A) Symphony (B) Palisade

(C) Articulate (D) Ornate

(17) The phototrophic bacteria derive their energy from one of the following source

(A) Respiration (B) Soil

(C) Nuclear energy (D) Radiant energy

(18) Phenol can be used as a _____ agent.

(A) Sterilizing

(B) Filtering

(C) Disinfecting

(D) Growth promoting

(19) All bacteria may not require one of the following as a substrate

(A) Sulphur (B) Oxygen

(C) Phosphorus (D) Iron

(20) Drinking water can be purified by derivatives of _____

(A) Alcohols
(B) Heavy Metals
(C) Iodine
(D) Chlorine

(21) Colony characteristics of the bacteria does not include one of the following

(A) Size (B) Margin
(C) Elevation (D) Gram character

(22) Which of the following is a pleomorphic bacteria?

(A) Bacilli (B) Mycoplasma
(C) Acinetobacter (D) Methanogen

(23) Poly hydroxyl butyrate can be characterized as a form of _____

(A) Stored energy
(B) extra cellular material
(C) carbon particles

(24) Which of the following is the standard chemical for determining the efficiency of an antimicrobial agent ?

(A) Alcohol (B) Aldehyde
(C) Phenol (D) Halogen

(25) The determination of G+C ratio is a mode of bacterial _____

(A) Symbiosis (B) Pathogenesis
(C) Differentiation (D) Classification

(26) The ability of bacteria to move away from a light source can be termed as

(A) Positive phototaxis

(B) Negative phototaxis

(C) Positive Chemotaxis

(27) The semi rigid extensions of the cell wall and cytoplasmic membrane having diameter less than the cell is termed as

(A) Stalk (B) Slime

(C) Capsule (D) Prosthecae

(28) The word Escherichia and coli in the name of the bacteria represent one of the following order

(A) Class; species (B) Genus; species

(C) species; Genus (D) species; Class

(29) In bacterial classification, the term Class represents a group of one of the following

(A) Divisions (B) Orders

(C) Family (D) Genera

(30) HEPA filter is used in _____

(A) Incubator

(B) Autoclave

(C) Laminar Air Flow

(D) Hot Air Oven

(31) In Archaea, the Lipids are linked with Glycerol by which of the following bond?

(A) Peptide (B) Ether

(C) Ester (D) Glycosidic

(32) Which of the following medium ingredient used for solidification of media?

(A) Peptone

(B) NaCl

(C) Yeast extract

(D) Agar - Agar Powder

(33) Amphitrichous and Monotrichous are arrangements of bacterial _____

(A) Capsule (B) Cell wall

(C) Flagella (D) Cell membrane

(34) The collection of bacterial strains with similar characteristics are grouped as a _____

(A) Clone (B) Pure culture

(C) Species (D) Genus

(35) Which one of the following is not a mode of bacterial cell division?

(A) Formation of sporangiospores

(B) Fragmentation

(C) Pollination

(D) Budding

2 Answer Any **Four** Short Questions from the following : 8

(1) Define: Motility.

(2) Explain the mode of action of dry heat.

(3) Give four examples of Gram negative bacteria (Note: write full names)

(4) What is the function of bacterial cell membrane.

(5) Define the term bacteriological media.

(6) Explain the term Bacterial capsule.

3 Answer Any **Three** questions in Brief : 9

(1) Draw a labelled diagram of bacterial cell.

(2) Write a note on colony characteristics of bacteria.

(3) Write a note on bacterial spores.

(4) Discuss filtration as a physical method of microbial control.

(5) Discuss the application of halogens as antimicrobial agents.

4 Write Short Notes on Any **Three** of the Following : 18

(1) Nutritional requirements of bacteria.

(2) Discuss in detail the methods of bacterial classification.

(3) Compare and contrast the cell walls of gram negative and gram positive bacteria.

(4) Discuss the mode of cell division in bacteria.