

**BRAINWARE UNIVERSITY****Term End Examination 2020 - 21****Programme – Bachelor of Science (Honours) in Biotechnology****Course Name – General Microbiology****Course Code - BBTC101****Semester / Year - Semester I**

Time allotted : 75 Minutes

Full Marks : 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

**Group-A**

(Multiple Choice Type Question)

1 x 60=60

1. (Answer any Sixty )

(i) “Animalcules” was described by:

- |               |               |
|---------------|---------------|
| a) Pasteur    | b) Jansen     |
| c) Fracastoro | d) Leewenhoek |

(ii) Who attacked the Spontaneous Generation theory?

- |           |                |
|-----------|----------------|
| a) Muller | b) Jenner      |
| c) Redi   | d) Spallanzani |

(iii) The first classification of bacteria was done in:

- |         |         |
|---------|---------|
| a) 1786 | b) 1867 |
| c) 1687 | d) 1787 |

(iv) Cell theory was given in:

- |         |         |
|---------|---------|
| a) 1838 | b) 1883 |
| c) 1840 | d) 1844 |

(v) Anthrax vaccine was developed by:

- |           |            |
|-----------|------------|
| a) Koch   | b) Laveran |
| c) Lister | d) Pasteur |

(vi) "Cells come from cells" was stated by:

- a) Pasteur
- b) Virchow
- c) Lister
- d) Semmelweis

(vii) "Phagocytosis" was discovered by:

- a) Koch
- b) Chamberlandt
- c) Metchnikoff
- d) Petri

(viii) Rabies vaccine was developed in:

- a) 1885
- b) 1886
- c) 1898
- d) 1875

(ix) Methanosarcina is:

- a) Fungi
- b) Plant
- c) Ciliate
- d) Archae

(x) Viroids are composed of:

- a) RNA
- b) DNA
- c) Nucleic acids
- d) None of these

(xi) Yeast is:

- a) Protist
- b) Bacteria
- c) Algae
- d) Fungi

(xii) Bacillus anthracis is:

- a) Cocci
- b) Non-spore forming Bacilli
- c) Spirilla
- d) Spore forming Bacilli

(xiii) Clostridium tetani is predominantly:

- a) Aerobic
- b) Anaerobic

c) Facultative

d) Microaerophilic

(xiv) Amoebiasis is prevented by:

a) eating balanced food

b) eating plenty of fruits

c) drinking boiled water

d) using mosquito nets

(xv) In Amoeba and Paramecium osmoregulation occurs through

a) pseudopodia

b) nucleus

c) contractile vacuole

d) general surface

(xvi) Which of the following bacteria lack a cell wall and are therefore resistant to penicillin?

a) Cyanobacteria

b) Mycoplasmas

c) Bdellovibrios

d) Spirochetes

(xvii) A cluster of polar flagella is called

a) lophotrichous

b) amphitrichous

c) monotrichous

d) peritrichous

(xviii) The protein from which hook and filaments of flagella are composed of, is:

a) keratin

b) flagellin

c) gelatin

d) casein

(xix) The cocci which mostly occur in single or pairs are

a) Streptococci

b) Diplococci

c) Tetrads

d) None of these

(xx) Which of the following may contain fimbriae?

a) Gram-positive bacteria

b) Gram-negative bacteria

c) Both of these

d) None of these

(xxi) Peptidoglycan accounts for how much amount of the dry weight of cell wall in many gram positive bacteria?

- a) 50% or more
- b) About 10%
- c) 11% + 0.22%
- d) About 20%

(xxii) Bacteria having no flagella are unable to

- a) move
- b) reproduce
- c) stick to tissue surfaces
- d) grow in nutrient agar

(xxiii) Which of the following is true about cell wall of gram-positive bacteria?

- a) It consists of multiple layers
- b) It is thicker than that associated with gram-negative bacteria
- c) It contains teichoic acids
- d) All of these

(xxiv) The cell walls of many gram positive bacteria can be easily destroyed by the enzyme known as

- a) lipase
- b) lysozyme
- c) pectinase
- d) peroxidase

(xxv) Peptidoglycan is also known as

- a) N-acetyl muramic acid
- b) murein mucopeptide
- c) N acetylglucosamine
- d) mesodiaminopimetic acid

(xxvi) Genetic system is located in the prokaryotes in

- a) Nucleoid
- b) Chromatin
- c) Nuclear material
- d) All of these

(xxvii) Which is most likely to be exposed on the surface of a gram-negative bacterium?

- a) Pore protein (porin)
- b) Protein involved in energy generation
- c) Lipoteichoic acid
- d) Phospholipids

(xxviii) The last step in synthesis of peptidoglycan is

- a) attachment of a peptide to muramic acid
- b) attaching two amino acids to form a cross-link
- c) attachment of a portion of peptidoglycan to a membrane lipid
- d) binding of penicillin to a membrane protein

(xxix) Cytoplasmic inclusions include

- a) ribosomes
- b) mesosomes
- c) fat globules
- d) all of these

(xxx) The cocci which forms a bunch and irregular pattern are

- a) Staphylococci
- b) Diplococci
- c) Tetrads
- d) Streptococci

(xxxi) Chemotaxis is a phenomenon of:

- a) swimming away of bacteria
- b) swimming towards a bacteria
- c) swimming away or towards of bacteria in presence of chemical compound
- d) none of these

(xxxii) The next to last step in peptidoglycan biosynthesis is:

- a) synthesis of the NAM-peptide subunit
- b) removal of the subunit from bactoprenol
- c) linking the sugar of the disaccharide-peptide unit to the growing peptidoglycan chain
- d) cross-linking the peptide side chains of peptidoglycan

(xxxiii) Periplasm is

- a) the area between the inner and outer membranes of gram-negative bacteria
- b) the area between the inner and outer membranes of Gram-positive bacteria
- c) the interior portion of mitochondria
- d) the area outside the cell membrane that is influenced by the polymers

(xxxiv) Carogonia is the female sex organ in which of the algae?

- a) Rhodophycophyta
- b) Xanthophycophyta
- c) Chrysophycophyta
- d) Chlorophycophyta

(xxxv) Frustules are found in which of the following algae?

- a) Bacillariophycophyta
- b) Chlorophycophyta
- c) Euglenophycophyta
- d) Rhodophycophyta

(xxxvi) Which of the following are formed in pyrenoids?

- a) Oil
- b) Glucose
- c) Starch
- d) Silica

(xxxvii) In Chlamydomonas, the most common method of sexual reproduction is:

- a) Isogamy
- b) Heterogamy
- c) Oogamy
- d) Spore formation

(xxxviii) Which of the following is a colonial green alga?

- a) Chlamydomonas
- b) Chlorella
- c) Volvox
- d) Spirogyra

(xxxix) In the fungal classification system, Ascomycetes come under the division of

- a) Gymnomycota
- b) Mastigomycota
- c) Amastigomycota
- d) Both Gymnomycota and Mastigomycota

(xl) Which division of fungi lack flagella?

- a) Mastigomycota
- b) Amastigomycota
- c) Gymnomycota
- d) Basidiomycetes

(xli) Which class of fungi among the following has motile cells with two laterally inserted flagella, one tinsel and the other whiplash?

- a) Chytridiomycetes
- b) Zygomycetes
- c) Deuteromycetes
- d) Oomycetes

(xlii) Fruiting bodies of slime moulds are called:

- a) acervulus
- b) sori
- c) apothecium
- d) perithecium

(xliii) The taxa having the ending -mycetes is:

- a) Division
- b) Subdivision
- c) Class
- d) Order

(xliv) The common yeast *Schizosaccharomyces* follows which of the following asexual reproduction methods?

- a) binary fission
- b) budding
- c) fragmentation
- d) spore formation

(xlv) The structure which contains the zygote nuclei in *Rhizopus stolonifer* is known as:

- a) progametangia
- b) zygosporangium
- c) suspensor cell
- d) coenozygote

(xlvi) The mature zygosporangium lies dormant for how many days?

- a) 4-5 days
- b) 1-3 months
- c) 1 year
- d) 20 days

(xlvii) Which of the following are acellular slime moulds?

- a) Acrasiomycetes
- b) Myxomycetes
- c) Oomycetes
- d) Ascomycetes

(xlviii) Several hyphae unite to form rope like strand called:

- a) Pseudopores
- b) Stromata

c) Sclerotium

d) Rhizomorphs

(xlix) Which of the following is used as a solidifying agent for media?

a) Beef extract

b) Peptone

c) Agar

d) Yeast extract

(l) Which of the following is a characteristic of beef extract?

a) product resulting from the digestion of proteinaceous materials

b) aqueous extract of lean beef tissue

c) aqueous extract of yeast cells

d) complex carbohydrate obtained from certain marine algae

(li) Which of the following is a rich source of B vitamins?

a) Peptone

b) Yeast extract

c) Beef extract

d) Agar

(lii) Nutrient broth, a liquid media contains beef extract and peptone respectively in how much amounts?

a) 0.2%, 0.4%

b) 0.1%, 0.6%

c) 0.3%, 0.5%

d) 0.7%, 0.3%

(liii) Which of the following instrument is used for sterilizing the media after it has been prepared?

a) Autoclave

b) Laminar air flow chamber

c) Inoculating needle

d) Incubator

(liv) Which of the following are functions of Maintenance media?

a) used for assay of vitamins, amino acids

b) used for determining the bacterial content

c) used for determining the type of growth produced by bacteria

d) used for the maintenance of the viability and physiological characteristics



(lv) Generation time of Escherichia coli is:

- a) 20 minutes
- b) 20 hours
- c) 20 days
- d) 200 hours

(lvi) The organism which grows best above 45°C are called:

- a) Psychrophilic
- b) Mesophilic
- c) Thermophilic
- d) Any of these

(lvii) Which of the following is used to grow bacterial cultures continuously?

- a) Chemostat
- b) Coulter Counter
- c) Hemostat
- d) Petroff-Hausser chamber

(lviii) A microbe, which grows at temperatures above 95° C is most likely to be:

- a) an archaean
- b) a fungus
- c) a protozoan
- d) none of these

(lix) Some organisms can use reduced inorganic compounds as electron donors and are termed as

- a) Lithotrophs
- b) Phototrophs
- c) Chemotrophs
- d) Photoorganotrophs

(lx) In turbidometric measurement, the growth is normally expressed as:

- a) cells per ml
- b) cfu/ml
- c) optical density
- d) mg N<sub>2</sub>/ ml