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BRAINWARE UNIVERSITY

Term End Examination 2023

Programme – M.Sc.(BT)-2021

Course Name – Microbiology and Industrial Applications

Course Code - MBT202

(Semester II)

Full Marks : 60

Time : 2:30 Hours

[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 15=15

1. Choose the correct alternative from the following :

- (i) Recall, The Five Kingdom arrangement of organisms was proposed by
- a) Whittaker
b) John Ray
c) Whitter
d) Carl Woese
- (ii) State, protozoa were first discovered by
- a) Pasteur
b) Leeuwenhoek
c) Darwin
d) Whittaker
- (iii) Recall, the taxa having the ending -mycetes is _____
- a) Division
b) Subdivision
c) Class
d) Order
- (iv) Select, which of the following comes under the category of positive association?
- a) neutralism
b) parasitism
c) commensalism
d) ammensalism
- (v) Group, The dominant mineral particles in most soils are compounds of _____
- a) sodium
b) potassium
c) magnesium
d) iron
- (vi) Identify, which of the following organisms are known to grow on the surfaces of freshly exposed rocks?
- a) green algae
b) diatoms
c) cyanobacteria
d) yeast
- (vii) Indicate, Component of biosphere related with soil is
- a) Lithosphere
b) Hydrosphere
c) Atmosphere
d) Stratosphere
- (viii) Focus, type strain is used for referring to?
- a) species
b) genus
c) family
d) division

- (ix) Deduce, % Similarity (%S) of each strain to every other strain is calculated by which method?
- a) Intuitive Method
b) Numerical Taxonomy
c) Genetic Relatedness
d) DNA homology experiments
- (x) Determine, which of the following are characteristics of archaebacteria different from eubacteria?
- a) methane-producers
b) extreme halophiles
c) thermoacidophiles
d) methane-producers, extreme halophiles, and thermoacidophiles
- (xi) Choose, according to Bergey's Manual of Systematic Bacteriology, prokaryotes that lack a cell wall belong to the group?
- a) Gracilicutes
b) Firmicutes
c) Tenericutes
d) Mendosicutes
- (xii) Choose, Which of the following is a biodegradable waste?
- a) Plastics
b) Polythene
c) Glass
d) None of these
- (xiii) Devise, the portion of the growth curve where rapid growth of bacteria is observed is known as _____
- a) Lag phase
b) Logarithmic phase
c) Exponential phase
d) Decline phase
- (xiv) Estimate, Laboratory diagnosis of Entamoeba histolytica depends on identification in the _____
- a) blood
b) stool
c) urine
d) saliva
- (xv) Justify: Bioremediation involves the
- a) usage of microbes to create new organisms
b) usage of anaerobic bacteria to create new antibiotics
c) usage of microbes to destroy environmental pollutants
d) usage of aerobic bacteria to create new vaccines

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Describe Microbial Fuel Cells? (3)
3. Enlist 3 examples each for physical and chemical method of sterilization (3)
4. Schematically represent the diversity of biodiesel producing microalgae. (3)
5. Devise how does the dilution rate influence the growth rate of a fermentation process? (3)
6. Define immobilization and give one example each from natural, synthetic and inorganic polymer. (3)

OR

Differentiate between primary and secondary metabolites.

(3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Describe, what do you mean by nitrogen fixation. Mention and explain the types. (5)
8. Write briefly about the nomenclature of enzymes. (5)
9. Illustrate in details the ultrastructure of Archaeobacteria(methanococcus) (5)
10. Debate on Symbiosis (Nitrogen fixation and ruminant symbiosis) (5)
11. Experiment on Cell based biotransformations- steroids, antibiotics (5)
12. Evaluate with a diagram the mechanism of action of an antibiotic. (5)

OR

(5)

Summarize briefly about the ex-situ Preservation and in-situ Preservation.

(5)
