



**BRAINWARE UNIVERSITY**

**Term End Examination 2019 - 20**

**Programme – Bachelors in Microbiology**

**Course Name – Introduction to Microbiology & Microbial Diversity**

**Course Code – BMBC101**

(Semester – 1)

Time allotted: 2.5 Hours

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)

20 x 1 = 20

1. *Choose the correct alternative from the following (Answer any Twenty)*
  - (i) Which of the following pioneers of Microbiology is credited with the discovery of microorganisms using high quality magnifying lenses (early microscopes)?
 

a. Anton Van Leeuwenhoek	b. Louis Pasteur
c. Robert Koch	d. Semmelweis
  - (ii) Joseph Lister's contribution is in introduction of
 

a. Development of Germ Theory	b. Aseptic techniques in surgery
c. Discarding spontaneous generation	d. None of these
  - (iii) Which among the following kingdoms were proposed by Whittaker?
 

a. Monera	b. Protista, Fungi
c. Plantae, Animalia	d. Monera, Protista, Fungi, Plantae, Animalia
  - (iv) Which of the following characters belong to kingdom Monera?
 

a. Eukaryotic	b. Heterotrophic
c. Multicellular	d. Presence of cell wall made of cellulose
  - (v) All of the following are considered microbes except
 

a. Viruses	b. Bacteria
c. Protozoa	d. Worms

- (vi) Which of the following diseases has been eradicated using immunization?
- Chicken pox
  - Measles
  - Smallpox
  - Mumps
- (vii) Mushrooms belong to
- Bacteria
  - Protozoa
  - Fungi
  - Virus
- (viii) Which of the following organisms are known to grow on the surfaces of freshly exposed rocks?
- Green algae
  - Diatoms
  - Cyanobacteria
  - Yeast
- (ix) Plants can't absorb molecular  $N_2$  in the atmosphere because
- $N_2$  has double bond; therefore highly stable
  - Abundance in the atmosphere inhibits absorption
  - $N_2$  has triple bond making it highly stable
  - None of these
- (x) What is the most common way that nitrogen fixation occurs?
- Lightning
  - nitrogen fixing bacteria
  - fossil fuel combustion
  - forest fires
- (xi) Legumes host nitrogen fixing bacteria, and thus are good crops to plant to replenish the soil.
- True
  - False
- (xii) Which of the following options is a component of acid rain?
- Ammonium
  - Denitrifying bacteria
  - Nitrogen oxides
  - Organic nitrogen
- (xiii) Organic nitrogen is converted back to inorganic nitrogen like ammonium through the process of
- nitrogen fixation
  - nitrification
  - decay
  - none of the choices
- (xiv) Cellulose is degraded to cellobiose by the enzyme \_\_\_\_\_
- cellulose
  - beta-glucosidase
  - hexokinase
  - cellulose dehydrogenase
- (xv) Sulphates are reduced to hydrogen sulphide by \_\_\_\_\_
- Desulfotomaculum sp.
  - Thiobacillus thiooxidans
  - Photosynthetic sulfur bacteria
  - Rhodospirillum



**Group – B**

(Short Answer Type Questions)

4 x 5 = 20

Answer any *four* from the following

2. Draw and describe the Cori cycle. 5
3. Describe the different common asexual spores of fungi. 5
4. Describe the contribution of microorganisms in alcohol fermentation. 5
5. Mention the applications of algae in agriculture. 5
6. Discuss the sexual reproduction process of fungi with diagram. 5
7. What is biodeterioration? What are the various microbes involved in this process? 3+2

**Group – C**

(Long Answer Type Questions)

2 x 10 = 20

Answer any *two* from the following

8. Describe the contribution of Louis Pasteur in the field of Microbiology 10
9. Draw and describe the contribution of microorganisms in Nitrogen cycle. 10
10. What is flagella? Describe briefly the flagellar movement in microorganisms. 3+7
11. What are the different functional groups of soil bacteria? Cite examples and mention their contribution in soil microbiology. 5+5