



DV-003-001211

Seat No. \_\_\_\_\_

**First Year B. Sc. (Sem. - II) (CBCS) Examination**

April / May - 2015

**Microbiology : Paper - MB.P - 201**

*(Microbial Chemistry & Physiology)*

**Faculty Code : 003**

**Subject Code : 001211**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions:**
1. All questions are compulsory.
  2. The paper is divided in two sections.
  3. There is no separate OMR sheet will be provided for Section I.
  4. Figures on right side indicate marks

**Section - I**

**Ques.1 Answer the following MCQ**

**20**

1. In hydrolysis reaction
  - A.  $H_2O$  is released.
  - B.  $H_2O$  is not involved.
  - C.  $H_2O$  is inserted.
  - D. None of the above
2. In water molecule when electrons are distributed unequally than it causes \_\_\_\_\_
  - A. Ionization
  - B. Bond formation
  - C. Dipole moment
  - D. Repulsion
3. In \_\_\_\_\_ reactions, polymers are broken down?
  - A. Isomerization
  - B. Acid-Base
  - C. Hydrolysis
  - D. Condensation
4. \_\_\_\_\_ is the one which resist the change in pH.
  - A. Buffer
  - B. Acid
  - C. Base
  - D. Litmus
5. Which of the following is an example of Oligosacchharide?
  - A. Raffinose
  - B. Glucose
  - C. Sucrose
  - D. Starch
6. Which of the following is also known as cane sugar?
  - A. Glucose
  - B. Sucrose
  - C. Fructose
  - D. Maltose

7. Which of the following bond is found in secondary structure of protein?
  - A. Peptide Bond
  - B. Ionic Bond
  - C. Hydrogen Bond
  - D. A & C both
8. Denaturation of protein leads to\_\_\_\_\_
  - A. Increase in viscosity and decrease in surface tension
  - B. Decrease in viscosity and Increase in surface tension
  - C. Decrease in viscosity and decrease in surface tension
  - D. Increase in viscosity and increase in surface tension
9. Which of the following RNA possess pseudouridine as nucleotide?
  - A. t-RNA
  - B. r-RNA
  - C. m-RNA
  - D. None of the above
10. Which of the following is unusual (minor) bases found in nucleic acids?
  - A. 5 Methyl cytosine
  - B. N<sub>4</sub> Acetyl cytosine
  - C. Pseudo uracil
  - D. All of the above
11. Sphingosine is\_\_\_\_\_
  - A. Saturated alcohol
  - B. Unsaturated alcohol
  - C. Imino alcohol
  - D. Amino alcohol
12. Which of the following is essential fatty acid?
  - A. Oleic acid
  - B. Arachidonic acid
  - C. Lenoleic acid
  - D. B & C
13. Psychrotrophs are:
  - A. Able to grow at 0 C but optimum temperature is 20-30°C.
  - B. Able to grow at 0 C and optimum temperature is also 0°C.
  - C. Able to grow at 0 C only, not beyond 10°C.
  - D. None of the above
14. \_\_\_\_\_utilizes energy from chemical compounds.
  - A. Chemotrophs
  - B. Phototrophs
  - C. Autotrophs
  - D. None of the above
15. A culture of bacteria produces 5 generations in 2 hours, what is the generation time for this bacterium?
  - A. 15 min.
  - B. 24 min.
  - C. 30min.
  - D. 1 hour
16. *Streptomyces* reproduces by
  - A. Budding
  - B. Fragmentation
  - C. Spore formation
  - D. Binary fission

17. What is ribozyme?  
 A. It is a cellular organelle.  
 B. It is RNA degrading enzyme.  
 C. It is catalytic RNA.  
 D. A & C.
18. Enzyme preparations can be made by which techniques?  
 A. Growing culture techniques  
 B. Resting cell techniques  
 C. Cell free enzyme technique  
 D. All of the above
19. Which of the following is a generalized mechanism of regulation of enzyme activity?  
 A. Membrane barrier  
 B. Covalent modification  
 C. Concentration of co enzyme  
 D. All of above
20. Constitutive enzymes are \_\_\_\_\_  
 A. Enzymes always produced by cells  
 B. Stored enzymes  
 C. Inducible enzymes  
 D. None of the above

## Section – II

**Ques.2 (A) Answer specifically (Any 3) (06)**

1. Define an atom and draw a diagram of carbon atom.
2. Define: Epimer.
3. What is Lyophilization?
4. Write a note on Phosphotidyl choline.
5. Explain feedback inhibition of linear and branched pathway.
6. Write 2 advantages of continuous culture technique.

**Ques.2 (B) Answer Specifically (Any 3) (09)**

1. What are isotopes? What are their applications?
2. Write a note on Sucrose.
3. Describe in brief denaturation of proteins.
4. Write in brief about temperature as physical condition required for bacterial growth.
5. Write in brief on Cholesterol.
6. Write a note on nomenclature of enzymes.

**Ques.2 (C) Write short notes (Any 2) (10)**

1. Write a note on chemical bonds.
2. Discuss in detail Heteropolysaccharides.
3. Discuss in detail DNA structure.
4. Write in detail on Enrichment techniques by exploiting chemical methods.
5. Write in detail on factors affecting on enzyme activity.

**Ques.3 (A) Answer specifically (Any 3) (06)**

1. What is Condensation reaction?
2. Write in brief on cyclic structure of glucose.
3. Write in brief about ninhydrin reaction with amino acids.
4. Write a note on Autotroph.
5. Define: Allosteric site of enzyme.
6. Write in brief about pyrimidines.

**Ques.3 (B) Answer Specifically (Any 3) (09)**

1. Explain hydrolysis reaction.
2. Explain in brief enantiomers.
3. Write a note on functions of proteins.
4. Enlist types of bacteria on the basis of gaseous requirements.
5. Write in brief about unusual structure of DNA.
6. Discuss growing culture technique for enzyme preparation.

**Ques.3(C) Write short notes (Any 2) (10)**

1. Explain dipole moment.
2. Give an elaborate account on structure of proteins.
3. Discuss in detail classification of lipids with suitable example.
4. Write an essay on bacterial synchronous growth.
5. Write an essay on regulation of enzyme synthesis.

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