

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
MSc DEGREE EXAMINATION MAY 2019  
(Second Semester)

Branch - BIOTECHNOLOGY

**DISCIPLE SPECIFIC ELECTIVE-I: BIOPROCESS TECHNOLOGY**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 \_\_\_\_\_ is referred as biological indicator of autoclave.  
(i) Bacillus stearothermophilus (ii) Bacillus subtilis  
(iii) Bacillus megaterium (iv) Bacillus cereus
- 2 The property which measures the resistance of a liquid to flow is \_\_\_\_\_.  
(i) Density (ii) Solubility  
(iii) Volume (iv) Viscosity
- 3 The chemical used for protein stability is \_\_\_\_\_.  
(i) EDTA (ii) Glycerol  
(iii) Chlorine (iv) APS
- 4 Which of the following is not a factor responsible for denaturation of proteins?  
(i) Change in pH (ii) Organic Solvents  
(iii) Charge (iv) Heat
- 5 The substrate used in the fermentation of citric acid is \_\_\_\_\_.  
(i) Beet molasses (ii) Sucrose  
(iii) Starch hydrolysate (iv) All of these
- 6 Which among the organism does not produce bioplastics even under nutrient deficiency?  
(i) Ralstonia eutropha (ii) Bacillus megaterium  
(iii) Pseudomonas fluorescens (iv) Methylobacterium rhodesianum
- 7 \_\_\_\_\_ is a heat sensitive enzyme in milk that is used as an indicator of pasteurization.  
(i) Lipase (ii) Alkaline Phosphatase  
(iii) Phosphatase (iv) Protease
- 8 The principle microorganism for yogurt is \_\_\_\_\_.  
(i) Streptococcus thermophilus (ii) Bacillus megaterium  
(iii) Leuconostoc citrovorum (iv) Streptococcus lactis
- 9 The level of glucose in urine can be detected by using \_\_\_\_\_ immobilized enzyme.  
(i) Glucose dehydrogenase (ii) Hexokinase  
(iii) Glucose oxidase (iv) All the above
- 10 The testing centre of MSME is absent in which city?  
(i) New Delhi (ii) Bangalore  
(iii) Chennai (iv) Mumbai

Cont...

**SECTION - B (25 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks ( 5 x 5 = 25)

11 a Analyze the Turbidostat and Chemostat control.

OR

b A brief account on the transfer of microbes-aseptic inoculation.

12 a Compare batch, fed-batch and continuous fermentation processes.

OR

b Write a short note on stabilization and formulation of the downstream product.

13a Give an account of the production of water soluble vitamins.

OR

b Analyze the production and need for bioplastics for the better future.

14 a Brief about the production of antibiotics with an example.

OR

b Narrate the value-added products of milk in brief.

15 a Write about the applications of immobilized enzymes in short.

OR

b Explain formulation of Biofertiliser in brief.

**SECTION -C (40 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks ( 5 x 8 = 40)

16 a Illustrate the different types of fermentors.

OR

b Give a detailed note on the media composition and stoichiometry of C : N ratio.

17 a Write an detailed account on microbial growth kinetics.

OR

b Describe in detail the various steps of downstream processing.

18 a Write an essay on the production of any one of the amino acid.

OR

b Illustrate the solvent production with an example.

19 a Write a detailed account on the production of microbial enzymes with an example.

OR

b Discuss - PHB production in detail.

20 a Write a detailed note on the immobilization of enzymes.

OR

b Recommend the establishment, development and marketing strategies for a MSME project applicant.