



SEAT NO. \_\_\_\_\_

No of printed pages: 03

[12/A-13]

SARDAR PATEL UNIVERSITY  
B.Sc. SEMESTER VI EXAMINATION 2022

Date: 06-10-22

Time: 09:30 p.m. to 05:30 p.m.

SUBJECT: MICROBIOLOGY US06CMIC86

INDUSTRIAL MICROBIAL TECHNOLOGY Total Marks: 70

Q-1 Answer all multiple choice questions by choosing the most appropriate one.

(10)

1. Rotary drum is used for \_\_\_\_\_ in microbial biotechnology.  
a) cell separation                                      b) cell disruption  
c) both, a) and b)                                      d) none of these
  
2. \_\_\_\_\_ is not a part of downstream processing.  
a) Product concentration                                      b) Quality control  
c) Media sterilization                                      d) Packaging and marketing
  
3. Which of the following affects speed of filtration?  
a) cell size                                      b) pore size of the filter  
c) turbidity of the slurry                                      d) all of these
  
4. Fermentation economics aims at reducing the \_\_\_\_\_ of the product.  
a) quality                      b) quantity                      c) both, a and b                      d) cost
  
5. LAL test detects presence of the \_\_\_\_\_ in a product.  
a) endotoxin                                      b) exotoxin  
c) enzymes                                      d) All of these
  
6. Hops are \_\_\_\_\_  
a) flowers                                      b) flavouring agents  
c) Bitter to taste                                      d) all of these
  
7. Which of these is not made with an application of amylase?  
a) Enzyme system in detergents                                      b) Starch powder  
c) Digestive syrups                                      d) Cheese
  
8. Production of vinegar by \_\_\_\_\_ process is very slow.  
a) trickling generators                                      b) open vats  
c) submerged                                      d) all of these
  
9. Glutamic acid is used as \_\_\_\_\_  
a) flavor enhancer                                      c) antifoam agent

c) food preservative

d) All of these

10. Aceton-butanol fermentation has risk of contamination due to \_\_\_\_\_.

a) protozoa

b) yeast

c) bacteriophage

d) none of these

Q-2(a) Fill in the blanks :( 04)

1. \_\_\_\_\_ filter aid is used during filtration process.( Calcium carbonate/diatomaceous earth)
2. \_\_\_\_\_ medium is used to check the presence of aerobic bacterial contaminants in sterility test.(Thioglycolate broth/Nutrient broth)
3. *Penicilliumroquefortis* used in the production of \_\_\_\_\_ (penicillin/ blue cheese)
4. Cyanocobalamin is called vitamin \_\_\_\_\_ commonly.( B6/B12)

(b) Mark true/false.Mention the question number carefully as given below :( 04)

1. Cell disruption is essential in case of recovery of extracellularproduct.
2. Lobster Aquaticus Luminous is the full form of LAL test.
3. Ripening of cheese decides the flavor of the cheese produced.
4. Amylase is often used in manufacture of detergents.

Q-3 Answer any ten (10) questions in brief. (20)

- a. What is the advantage of using a fungal culture over a bacterial producer in downstream processing?
- b. What is the advantage of using a bacterial culture over a fungal producer in any fermentative production industry?
- c. What is liquid-liquid extraction?
- d. What is bioassay?
- e. What is pyrogen?
- f. Name any three media used in sterility testing and write its purpose.
- g. Write biochemistry of microbial vinegar production.
- h. What is malting?

- i. What is semi synthetic penicillin?
- j. Enlist four major applications of yeast biomass.
- k. Enlist four major applications of ethanol.
- l. Name the microbes involved in the industrial production of cyanocobalamin.

**Q-4 ANSWERS ANY 4 QUESTIONS OF THE QUESTIONS GIVEN BELOW. (32)**

1. What is downstream processing? Describe physico-mechanical methods for the disruption of microbial cells in DSP.
  2. Write an essay on fermentation economics.
  3. Write the criteria for the selection of recovery process and describe liquid-liquid extraction in brief.
  4. Enlist the methods of enzyme immobilization and describe any two of them.
  5. Describe the beer fermentation process and its media components in brief.
  6. Write a note on the microbiology of cheese production.
  7. Write an essay on production of penicillin.
  8. Describe amylase production by bacteria.
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