

[69]

SARDAR PATEL UNIVERSITY
3rd Semester Examination--SYBSc-Biotechnology
Course US03CBIT22; Paper--Microbial Biotechnology
Date-04/01/2021;Monday

Time 2.00pm-4.00pm

Total Marks-70

Q1. Multiple choice questions. Attempt all questions.

[10]

i. Beer making process is known as

A. Mashing B. Brewing

C. Malting D. Sparging

ii. Which of the following is not a fermentation product?

A. CO₂ B. Ethanol

C. Oxygen D. Lactic acid

iii. Which of the following disinfectants act by disrupting microbial membranes?

A. Cationic detergents B. Halogens

C. Heavy metals D. Aldehydes

iv. The protein hydrolysates are collectively referred to as:

A. Tryptones B. Peptones

C. Malt Extract D. Whey

v. Ripening is the process associated with production of

A. Milk B. Bread C. Cheese D. Antibiotic

vi. Which of the following is not a downstream process?

A. Product recovery B. Product purification

C. Media formulation D. Cell lysis

vii. Viruses contain

A. DNA only B. RNA only

C. Both DNA & RNA D. Either DNA or RNA

viii. The major component of bacterial cell wall is

A. cellulose B. Lipoprotein

C. pectin D. Peptidoglycan

ix. In mushroom cultivation, Spawn is

A. Compost B. Button stage

C. Vegetative mycelium D. Harvested mushroom

x. Role of Leghaemoglobin in rhizobium is

A. Energy release B. N₂ absorption

C. Protecting nitrogenase D. Supply of oxygen

Q2. Fill in the blanks. True/false.

[08]

a. Plant cell wall is composed of -----.

b. Viruses are obligate parasite. (True/False).

c. Fermentation is----generating process.

d. Ripening process is associated with the production of-----.

e. Mycorrhiza is a symbiotic association between algae and fungus(True/False).

f. Protease can be used to remove the stain of oil on clothes(True/False).

g. In batch culture exponential growth is observed in-----phase.

h. Pokilo is a type of nitrogen fixing biofertilizer (True/False).

[1]

[P.T.O.]

- Q3. Short questions. Attempt any TEN questions.** [20]
- a) Define fermentation. Give four examples of fermentation products.
 - b) Enlist the characteristic features of bacteria.
 - c) How viruses are different from bacteria?
 - d) Explain the term secondary screening of microorganisms.
 - e) Give the composition of natural media for fermentation.
 - f) List out the applications of fermented food.
 - g) Enlist different types of nitrogen fertilizers.
 - h) What is 'Torula'? Explain.
 - i) What do you mean by the term molasses?
 - j) Define batch culture and continuous culture.
 - k) Enlist the applications of enzymes.
 - l) How heavy metals inhibit/kill microorganisms?

- Q4. Long questions of 8 marks each. Attempt any FOUR questions. (4X8=32)**
- I. Explain the various types of bacteria on the basis of their shape and flagella. [08]
 - II. Discuss the characteristic features of a prokaryotic cell with a labelled diagram [08]
 - III. Enlist all the methods for microbial isolation. Explain any two methods [08]
 - IV. Explain the use of corn steep liquor and sulphite waste liquor in crude medium. [08]
 - V. Explain all the steps involved in the production of cheese. [08]
 - VI. Differentiate between batch culture and continuous culture. Explain the growth curve in batch culture. [08]
 - VII. Describe in detail the production and use of alga as biofertilizer. [08]
 - VIII. Explain the method of preparing spawn and enlist the applications of mushroom. [08]

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