

AP-460

- (d) Give outline of recombinant hepatitis vaccine production. 4
- (e) Describe streptomycin production in brief. 4
- (f) Discuss standardisation of vaccine. 4
7. (a) Explain the principle of Thin Layer Chromatography. 4
- (b) What are radioactive isotopes ? Mention its applications. 4
- (c) Discuss the principle and working of colorimeter. 4

OR

- (d) Mention the applications of paper electrophoresis. 4
- (e) Explain working and applications of UV-visible Spectrophotometer. 4
- (f) Define-Beer's law and Lambert's law. 4

B.Sc. Part-II (Semester-III) Examination
3S : INDUSTRIAL MICROBIOLOGY
(Industrial Fermentation, Metabolism & Bioinstrumentation)

Time : Three Hours]

[Maximum Marks : 80

Note :—(1) All questions are compulsory.

(2) Draw diagrams wherever necessary.

1. (A) Fill in the blanks :

2

- (i) The organism used in wine production is _____ .
- (ii) Controlling of excess foam formation during fermentation is carried out by _____ .
- (iii) _____ fungi is used for amylase production.
- (iv) In electrophoresis molecules are separated under the influence of _____ .

(B) Choose correct alternative :

2

(i) Spectrophotometer is used for measuring of unknown solution _____.

- (a) temperature
- (b) pH
- (c) pressure
- (d) optical density

(ii) _____ is an example of Non-symbiotic nitrogen fixing organism.

- (a) Rhizobium
- (b) Azatobacter
- (c) Proteus
- (d) E.coli

(iii) _____ key enzyme of Electron Transport Chain.

- (a) Cytochrome Oxidase
- (b) Amylase
- (c) Catalase
- (d) Urease

(d) Enlist the different methods of Acetic Acid production and its fermenting microflora. 4

(e) Name the different steps in wine production. 4

(f) Draw flowsheet diagram for riboflavin production. 4

5. Define fermentation. Describe purification of amylase in detail. 12

OR

Describe in detail solid-liquid separation and purification of fermentation product during downstream process of vitamin Riboflavin. 12

6. (a) What do you mean by antibiotic ? Draw the flowsheet diagram of penicillin production. 4

(b) Explain testing and control of vaccine. 4

(c) Describe in brief production of tetanus toxoid. 4

OR

(iv) Lyophilisation is also known as _____ .

- (a) Drum drying
- (b) Freeze drying
- (c) Cold sterilisation
- (d) Surface sterilisation

(C) Answer in **ONE** sentence :

4

- (i) What is inoculum build up ?
- (ii) Define wine.
- (iii) Name the organism used as single cell protein.
- (iv) Give one application of chromatography technique.

2. Define glycolysis. Describe Embenden-Mayerhof-Parnas pathway along with the ATP production. 12

OR

Define Enzyme. Describe classification of enzymes in detail.

12

3. (a) What are the advantages of biofertilizer ? 4
- (b) Explain recovery process of fungal biomass from fermentation media. 4
- (c) Discuss in brief industrial production of any one bacterial insecticide. 4

OR

Explain the following :

- (d) Advantages and disadvantages of Single Cell Protein. 4
- (e) Significance of microbial control. 4
- (f) Biological pest control with suitable example. 4
4. (a) Give outline of amylase production by submerged method. 4
- (b) Explain various defects of wine. 4
- (c) Define fermentation and name the types of fermentation. 4

OR