

- All questions are compulsory.
- Figures to Right indicate marks.
- Draw diagram wherever necessary.

**QI. A. Answer the following questions. ( Any four)** (8M)

1. What is pasteurization?
2. What do you mean by fungicide?
3. What is sepsis?
4. What do you mean by transformed cell line?
5. Why inverted microscope is used in ATC?
6. What is callus culture?
7. What do you mean by organ culture in terms of ATC?
8. What is pollen culture?

**QI.B. Answer the following: (any 2)** (6M)

1. Classify the organisms based on energy sources.
2. Explain the importance of meat extract in synthetic media preparation.
3. Explain types and remedies for contamination in ATC.
4. What are micronutrients and macronutrients?

**QI C. Answer the following: (any 1)** (6M)

1. Explain the construction & working of an autoclave.
2. What are the constituents of growth media?

**Q II A. Answer the following (Any 4)** (8M)

1. Give two examples of nitrogen sources used in fermentation medium
2. Give two examples of antifoam agents used in fermentation medium
3. State the significance of baffles.
4. State the importance of black strap molasses as a component of fermentation medium.
5. What is primary screening?
6. What is the significance of wetting agent in inoculum development of fungi?
7. Give two examples of spargers?
8. What is Crop?

**QII B. Answer the following: (any 2)** (6M)

1. Write a note on rotary drum filter.
2. Write a note on Inoculum development of bacteria.
3. Write a note on impellers
4. Describe the crowded plate technique

**QII C. Answer the following: (any 1)** (6M)

1. Describe in detail carbon and nitrogen sources in fermentation medium
2. Describe in detail Secondary screening



**QIII A. Answer the following questions: (any 4)**

(8M)

1. What do you mean by biosensor?
2. Mention the components for medium preparation of amylase.
3. What is entrapment?
4. What do you mean by immobilization of enzyme.
5. Mention two applications of biosensor.
6. Mention two fungal sources of alpha amylase?
7. Write any two application of immobilized enzyme.
8. What are the by-products of alcohol industry?

**QIII B. Answer the following questions in brief: (Any 2)**

(6M)

1. Write down any three beneficial features of biosensors.
2. Write a note on acid protease production.
3. Write about use of immobilized enzyme in pharmaceutical industries..
4. Write a note on curdling of milk.

**QIII C. Answer the following questions in brief: (any 1)**

(6M)

1. Write a note on components of biosensor.
2. Give an account on covalent binding method.

**QIV.A Answer the following. (Any one)**

(2M)

1. What is microbiostasis?
2. What do you mean by cross contamination?

**QIV.B (i) Fill in the blanks. (Any one)**

(1M)

1. In Berkfeld filters, dried cylinders are heated in an oven to about \_\_\_\_\_ to bind the materials together.  
a. 100°C      b. 500°C      c. 2000°C
2. An autoclave is used to sterilize \_\_\_\_\_.  
a. Media      b. Hormones      c. Alcohol

**QIV.B (ii) Name the following. (Any two)**

(2M)

1. Organisms which neither require oxygen nor get inhibited/killed by it.
2. Organisms which can utilize simple organic material.
3. Organisms which require CO<sub>2</sub> as a sole carbon source to produce energy for themselves.
4. Organisms which assimilate CO<sub>2</sub> and utilize for food generation.

**QIV C. Explain the following: (any 1)**

(2M)

1. Molasses
2. Log Phase

**QIV D. Match the following (Any 3)****(3M)**

- |                          |                         |
|--------------------------|-------------------------|
| 1. Roll-Bottle technique | a. Flocculation         |
| 2. Alcohol               | b. Agitator             |
| 3. Ultrasonication       | c. Precipitation        |
| 4. Vaned disc            | d. Inoculum development |
| 5. Ammonium sulphate     | e. Cell disruption      |
| 6. Alum                  | f. Antifoam agent       |

**QIV E. Answer in short: (any 1)****.(2M)**

- |                  |                        |
|------------------|------------------------|
| 1. Encapsulation | 2. Ripening of cheese. |
|------------------|------------------------|

**QIV.F. Answer the following (any 3)****(3M)**

1. Name any two types of cheese.
2. Mention any 2 applications of biosensor.
3. Name one hydrogen utilizing bacteria.
4. Mention any two component of medium for vitamin B<sub>12</sub> production.
5. Name any two types of biosensor
6. Write down the full form of SCP.

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