

2023

Time - 3 hours

Full Marks - 60

Answer all groups as per instructions.

Figures in the right hand margin indicate marks.

Candidates are required to answer

in their own words as far as practicable.

Draw labelled diagrams wherever necessary.

GROUP – A

1. Fill in the blanks. (all) [1 × 8
- (a) The enzyme used for removing clots from the blood vessels is _____.
- (b) Vinegar is obtained from bacterium _____.
- (c) Citric acid is obtained from the fungus _____.
- (d) Nitrogenase requires _____ as cofactor.
- (e) Starting, for lowering blood cholesterol level is obtained from microbe _____.
- (f) Cyclosporin A, immuno-suppressive agent is obtained from microbe _____.

P.T.O.

[2]

- (g) The baffles are incorporated into fermenters to improve _____.
- (h) Liquid-liquid extraction is method to separate metal complexes on the basis of their _____.

GROUP – B

2. Answer any eight of the following questions within two to three sentences each. [1½ × 8

- (a) What is Batch fermentation ?
- (b) Write about use of enzymes in classification of fruit juice.
- (c) How are microbes used in production of organic acids ?
- (d) Write about role of microbes in producing antibiotics.
- (e) Which microbes are used in fermentation of beverages ?
- (f) What is BOD ?
- (g) Write a note on casein hydrolysis.
- (h) What is VAM ?
- (i) Write about use of microbes in biofuels production.
- (j) Which microbes are used as biofertilizers ?

[3]

GROUP – C

3. Write notes any eight of the following within 75 words each.

[2 × 8

- (a) Bioreactor
- (b) Use of microbes in SCP
- (c) Microbes in Bakery
- (d) Lyophilization
- (e) Use of microbes in retting of fibres
- (f) Role of microbes in soil formation
- (g) Microflora in water
- (h) COD
- (i) Bioremediation
- (j) Mycorrhizae

GROUP – D

4. Answer any four of the following questions within 500 words each.

- (a) Discuss about industrial uses of microbes. [6
- (b) Describe the downstream processing for obtaining fermentation products. [6
- (c) Discuss role of microbes in producing enzymes for industrial uses. [6

P.T.O.



[4]

- (d) Discuss about methods and applications of enzyme immobilization. [6]
- (e) Discuss about role of microbes in sewage treatment and control of water pollution. [6]
- (f) Discuss about ecological and agricultural importance of soil micro-organisms. [6]
- (g) Discuss about formation of bacterial nodules in roots of leguminous plants and their roles. [6]
- (h) Discuss role of microbes in bioremediation of contaminated soils.