

D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1.

CBT 6A INDUSTRIAL BIOTECHNOLOGY

SECTION-A 2 Marks

1. Define fermentation.
2. List out the differences between aerobic and anerobic fermentation?
3. Define upstream processing.
4. Define downstream processing.
5. What is a bioreactor?
6. What are the components of parts of fermentation process?
7. Explain the types of impeller.
8. What are the types of fermentors?
9. What are the advantages of bioreactors?
10. How industrial biotechnology is help in food industries?
11. Define biocatalyst.
12. Write any three application of industrial biotechnology.
13. Difference between upstream and downstream process?
14. What are the steps involves in upstream process?
15. Explain fermentation techniques.
16. Write any two fermentation products

SECTION-B 5 MARKS

1. Explain the scope of industrial biotechnology.
2. Define the ranges of fermentation processes.
3. Explain the fermentor parts.

4. List out the application of industrial biotechnology.
5. Draw the structure of fermentor and mention its parts.
6. Explain in detail about upstream process.
7. Write about Bioreactor in fermentation techniques.
8. Explain Pencillin and its history.
9. Write a schematic representation of a typical fermentation process.

SECTION-C

10 Marks

1. Write about introduction and scope of industrial biotechnology.
2. Explain about the steps involved in upstream processes.
3. Explain about downstream processes and the methodologies involved.
4. Explain fermentor parts and its design.
5. Explain the fermentation techniques.

UNIT -II

1. What are the types of fermentation process?
2. Explain lyophilization technique.
3. Fed-batch reactor – Principle.
4. Chemostat and Turbidostat – Difference.
5. Isolation methods employed in isolation of industrially important microbes.
6. What is micromanipulation technique?
7. What is enrichment culture technique?
8. How is serial dilution method performed?
9. What is cryopreservation?
10. What are the different methods used in preservation of microbes?
11. List out the carbon sources used for fermentation media.
12. List out the nitrogen sources used for fermentation media.
13. List out the mineral resources used in fermentation media.

14. What are the necessary vitamins supplemented in fermentation media?
15. What are the antibiotics used for growth of microbes in fermentation media?
16. Difference between Simple and complex media?
17. Mention the uses of liquid nitrogen.
18. How is media sterilized?
19. How is strain improved?
20. What methods are employed for strain improvement?
21. Discuss the natural recombination method of strain improvement.
22. Discuss the genetic engineering method of strain improvement.