Dr. MPS GROUP OF INSTITUTIONS

DEPARTMENT OF BIOTECHNOLOGY

Question Bank-2022
M.Sc (Biotechnology) III Semester
Course –XI
Bioprocess Engineering and technology

Note: There are Eight Questions in all. Each question carries 15 marks.

1. Write short notes on any three: 15
(i) Bubble Columns Bioreactor
(ii) Upstream Process
(iii) Downstream Process
(iv) Sterilization in Fermentation

2. (a) State general features of an ideal bioreactor. 5
(b) What are the various types of bioreactors? Describe any one of them 10

3. What do you mean by Bioprocess Engineering? Explain the applications of Bioprocess Engineering. 15

4.(a) Outline the methods of isolation, preservation and maintenance of industrial microorganism. 9

(b) Discuss the effect of temperature and substrate concentration on microbial growth. 6

5. (a) Describe the microbial growth kinetics. 9
(b) Brief the effect of temperature and substrate concentration on microbial growth. 6

6. (a) Critically evaluates the batch, Fed- batch and continuous microbial processes. 9
(b) How are the fermentation media sterilized? 6

7.(a) explain various typical unit operations involved in downstream processing. 9

8. Discuss the measurement and control of bioprocess parameters. 15

9. (a) State general features of an ideal bioreactor. 5
(b) What are the various types of bioreactors? Describe any one of them 10

10. What do you mean by Bioprocess Engineering? Explain the applications of Bioprocess Engineering. 15

11.(a) what is Bioreactor? Describe the stirred tank bioreactor in detail. 9

(b) Discuss the effect of Agitation and Aeration in fermentation process. 6

12. (a) evaluates the batch, Fed- batch and continuous microbial processes Describe the Batch fermentation in details. 9

13. How are the fermentation media sterilized? 6

14.(a) Discuss the measurement and control of bioprocess parameters. 9
(b) Describe all steps used in upstream processing. 6

15. Describe all steps used in upstream processing. 15