LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – **BIOTECHNOLOGY**

THIRD SEMESTER – NOVEMBER 2017

BT 3825 - BIOPROCESS & PHARMACEUTICAL BIOTECHNOLOGY

Date: 08-11-2017 Dept. No. Max. : 100 Marks
Time: 09:00-12:00

PART – A
Answer ALL the Questions

I. Choose the correct answer (5 x 1 = 5 Marks)

1. Yield coefficient represents
   a) biomass or product produced b) conversion efficiency of a substrate into product c) conversion rate of a substrate into product d) production time of product

2. Which of the following is not physical method for the cells rupturing?
   a) milling b) homogenisation c) ultrasonication d) enzymatic digestion

3. Impellers used in fermentors help in
   a) aeration b) agitation c) antifoaming d) absorption

4. Muromonab – CD 3 is used for
   a) reversal of kidney transplant rejections b) anaemia
   c) prevention of blood clotting d) diabetes mellitus

5. Alteplase is used to
   a) dissolve blood clots b) increase insulin production
   c) control blood pressure d) treat cystic fibrosis

II. State whether the following are true or false, if false, give reason (5x1=5 Marks).

6. The productivity of a continuous fermentation is less than that of batch fermentation.
7. Red algae used as food is porphyra.
8. Peptide mapping is done for identification of proteins.
9. Sulfur dioxide is added to wine during its production to enhance the growth of lactobacilli.
10. Nutritional deficiency is the factor which causes the accumulation of organic acids in fermentation

III. Complete the following (5 x 1= 5 Marks)

11. Primary metabolites are produced during _____.
12. Citric acid is recovered by adding _____.
13. L – glutamic acid is produced by _____through direct fermentation.
14. Hydro carbon of interest in the bacterialSCP production is _____.
15. Phenolic acids are potent _____.

IV. Answer the following, each within 50 words (5 x 1 = 5 Marks)

16. What are the rules to be followed while doing scale up studies?
17. How ionizing radiations cause mutation?
18. Define auxostat.
19. How are fermented milk products classified?
20. What is indigenous fermentation?

PART B

Answer the following, each within 500 words. **(5 x 8 = 40 marks)**

Draw diagram wherever necessary

21. (a) What is a fermenter? Give the basic structure of a fermenter.

OR

b) Write briefly on the different methods of cell disruption in downstream processing.

22. (a) Discuss strain improvement based on mutation and Recombinant DNA Technology

OR

(b) Give the structural details and application of fluidized bed reactor and tower Fermenter.

23. (a) Write short notes on liquid – liquid extraction, liquid – solid extraction

OR

(b) Write about the different types of centrifuges used in bioprocessing industries.

24. (a) Write in detail on targeted drug delivery? Add a note on different type of delivery vehicles.

OR

(b) Write a short note on the production of recombinant insulin.

25. Give a brief account of the clinical development of the first therapeutic antibody.

OR

(b) Discuss the role of FDA in clinical trials.

PART – C

Answer any TWO of the following, each within 1500 words. **(2 x 20 = 40 Marks)**
Draw diagrams wherever necessary.

26. Write in detail on the methods and maintenance of industrially important cultures.

27. What are the different types of cheese? Explain in detail the production of cheese.

28. Write in detail on target drug delivery.

29. Explain bioanalytical method validation and its pharmaceutical application.

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