



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – BIOTECHNOLOGY

THIRD SEMESTER – APRIL 2017

BT 3825- BIOPROCESS & PHARMACEUTICAL TECHNOLOGY

Date: 26-04-2017
09:00-12:00

Dept. No.

Max. : 100 Marks

PART – A

Answer ALL the Questions

I. Choose the correct answer

(5 x 1 = 5 Marks)

1. A continuous bioreactor in which only the flow rate is used to control the rate of cell or product productivity is called
a) chemostat b) turbidostat c) level state d) hemostat
2. 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
3. Natural citric acid is produced by
a) fruits b) yeasts c) molds d) bacteria
4. Muromonab – CD 3 is used for
a) reversal of kidney transplant rejections b) anaemia
c) prevention of blood clotting d) diabetes mellitus
5. In wine production malolactic fermentation is carried out by
a) acetic acid bacteria b) propionic acid bacteria c) lactic acid bacteria
d) yeasts

II. State whether the following are true or false

(5x1=5 Marks)

6. The productivity of a continuous fermentation is less than that of batch fermentation.
7. Fumaric acid is produced by anaerobic fermentation.
8. Red algae used as food is porphyra.
9. Peptide mapping is done for identification of proteins.
10. Addition of Polyethylene Glycol to therapeutic proteins increases the stability in the body.

III. Complete the following

(5 x 1 = 5 Marks)

11. Antifoam agents lower _____.
12. Metal strips attached to inner surface of fermenters to prevent vortex is called _____.
13. Itaconic acid is produced by _____.
14. During beer production, the conversion of barley starch to sugar is called _____.
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 do ionizing radiations cause mutation?
18. Define auxostat.
19. List the benefits of taking part in a clinical trial.
20. What is an informed consent?

PART – B

(5×8 = 40 Marks)

Answer the following, each within 500 words. Draw diagrams wherever necessary.

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

OR

b) Give a detailed account of cell separation techniques.

22. (a) Discuss the different types of biotech pharmaceuticals.

OR

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

23. (a) Give a brief account of fermented milk products.

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. Discuss briefly the nutritional benefits and drawbacks of single cell protein

OR

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

PART – C

(2×20 = 40 Marks)

Answer any TWO of the following, each within 1500 words; Draw diagrams wherever necessary.

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

27. How are chromatography techniques used in downstream processing? Explain.

28. Explain in detail the protocol and different phases of a clinical trial.

29. Write in detail on target drug delivery.

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