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B.E. / B.TECH. DEGREE EXAMINATION, MAY 2023

Third Semester

BT18303– BASIC INDUSTRIAL BIOTECHNOLOGY*(Biotechnology)***(Regulation 2018 / Regulation 2018A)****TIME: 3 HOURS****MAX. MARKS: 100**

- CO 1** Summarize the steps involved in the production of bio products and methods to improve modern biotechnology.
- CO 2** Apply basic biotechnological principles, methods and models to solve biotechnological tasks.
- CO 3** Identify and debate the ethical, legal, professional in the field of biotechnology.
- CO 4** Identify the social issues in the field of biotechnology.
- CO 5** Design and deliver useful modern biotechnology products to the Society.

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. Comment on GRAS and GILSP.	1	2
2. List the disadvantages in using bacteria and fungi in the fermentation process.	1	2
3. Write the three approaches for large scale production of aminoacids.	2	2
4. State the applications of Gluconic acids.	2	2
5. Differentiate between sterols and steroids.	3	2
6. Mention the importance of precursors in secondary metabolite production.	3	2
7. List the modes of action of preservatives in microbial cells.	4	2
8. Classify the Biopesticides.	4	2
9. Draw a flow chart for the upstream process of recombinant therapeutic proteins production.	5	2
10. Specify few Monoclonal antibodies.	5	2

PART- B (5 x 14 = 70 Marks)

	Marks	CO	RBT LEVEL
11. (a) Comment on Process flow sheeting –Elaborate the block diagrams, draw a pictorial representation for polyol production	(14)	1	3
(OR)			
(b) Explain in detail the design and selection of a strain for the fermentation process.	(14)	1	3

12. (a) Explain the commercial importance and production process of acetic acid and citric acid. **(14) 2 3**

(OR)

(b) Explain primary metabolite production and the steps involved in the production process of any two amino acids. Comment on the commercial uses of amino acids. **(14) 2 3**

13. (a) Discuss the various secondary metabolites which are commercially produced for human use and also compare the primary and secondary metabolites. **(14) 3 3**

(OR)

(b) Explain the upstream and downstream processing of streptomycin with the help of a flow sheet. **(14) 3 3**

14. (a) Explain in detail the industrial production of enzymes and its commercial applications. **(14) 4 3**

(OR)

(b) Elaborate on the criteria for the selection of microorganisms, the basic production process of cheese & beer, from any microorganism in a detailed manner. **(14) 4 3**

15. (a) Outline the processes involved in the production of therapeutic and diagnostic applications of recombinant proteins with suitable examples. **(14) 5 3**

(OR)

(b) Discuss the Characterization of cultured cells & measurement of growth parameters of cultured cells. **(14) 5 3**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Criticize the contemporary challenges involved in the production of modern biotechnology products. Also provide the possible solutions to address them.	(10)	5	5