2709N582

Candidate's Seat No :_____

B.Sc Sem.-6 (Rep) Examination
CC 309
Biotechnology
September-2024

Time : 2-30 Hours] **[Max. Marks : 70**

Question 1: Describe the processes used for sterilization of air and media used in industrial fermentation. (14 Marks)

OR

Question 1(A): Describe the selection of raw materials used for industrial fermentation. (7 Marks)

Question 1(B): How are industrially applicable microorganisms selected? Describe in detail. (7 Marks)

Question 2: Describe the Medium, Fermentative Process and Recovery for Production of Yeast biomass. (14 Marks)

OR

Question 2(A): Describe in detail various phases of growth curve of bacteria. (7 Marks)

Question 2(B): Write a detailed note on production of *Bacillus thuringiensis* and its use. (7 Marks)

Question 3: Explain overproduction of amino acids using auxotrophic mutants and nutrient limitation. (14 Marks)

OR

Question 3(A): Discuss the fermentative production of Vitamin B_{12}. (7 Marks)

Question 3(B): Write a note on Fermentative Production of Citric acid. (7 Marks)

Question 4: What are secondary metabolites? Describe how their production is regulated in a cell and how it can be overproduced? (14 Marks)

OR

Question 4(A): Describe the production of Cephalosporin. (7 Marks)

Question 4(B): Write a detailed note on production of fermentative production of Xanthan gum. (7 Marks)

P.T.O.

NS82-2

Question 5: Attempt any seven questions (2 Mark each) (14 Marks)

1. Name constituents of CSL.
2. What was the contribution of Florey and Chain in microbial fermentation?
3. Why do we need to add antifoaming agents?
4. Write the scientific name of any two edible mushrooms.
5. What is diauxic growth curve?
6. What is submerged fermentation?
7. Name one free-living nitrogen fixing bacteria and one symbiotic nitrogen fixing bacteria.
8. Which compound is used to cure scurvy?
9. Define primary metabolite and trophophase.
10. Which fungus is used to produce ergot alkaloids?
11. Name any one antibiotic and its mode of action.
12. What is PHB and its use?

—X—