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Question Paper Code: 94D03

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Fourth Semester

Bio technology

19UBT403- BASIC INDUSTRIAL BIOTECHNOLOGY

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. There are 3 different strains under Lactic acid bacteria. What are they and Comment on Lactose Intolerance condition CO1- U
2. State the functions of following drugs - Tetracycline and streptomycin CO1- U
3. Distinguish between Auxotrophic mutants and Regulatory mutants CO1- U
4. List out the various Industrial Applications of alpha amylases CO1- U
5. Which drug is considered as Queen of Drugs ?What is its function CO1- U
6. How did Ernst Chain make the penicillin stronger?Why did US become more interested in producing penicillin during 1942? CO3- App
7. Elucidate the VAM-POT method CO1- U
8. How will you analyse Alkaline proteases from Neutral proteases CO2- Ana
9. List out the animal cell culture products and mention its cell line origin details CO1- U
10. Give an idea about the recombinant growth hormone CO3- App

PART – C (5 x 16= 80 Marks)

11. (a) A man X is being selected as Fermentation Engineer in a Distillation unit. She is appointed to look after Batch, Fed batch and Continuous Fermentation of various products but she is confused and got clarified from her Head Y. Imagine that you are Y and explain the differences between these 3 fermentation. CO2- Ana (16)

Or

- (b) The Principal of college address a social problem in a Notice Board .It says “A large quantity of waste water is generated everyday in cities and towns. The major component of this waste water is human excreta, organic matter and pathogenic microbes also.”He needs a design of Sewage treatment plant to implement at the college. Help him out by elucidating with the diagrams, flowcharts and proper explanations. CO2- Ana (16)
12. (a) Citric acid has high economic potential owing to its numerous applications. Analyse the biochemistry of citric acid formation, choices of citric-acid producing microorganisms ,raw materials, fermentation strategies, the effects of various fermentation conditions, recovery and the numerous applications CO2- Ana (16)
- Or
- (b) In 2010, the U.S. Department of Energy issued a report that listed lactic acid as a potential building block for the future. Bearing the importance of lactic acid in mind, Explain it's properties, applications, production and purification processes. CO2- Ana (16)
13. (a) “A newly released techno-economic analysis finds that India is potentially a global leader in Ethanol production”. Explain its production by giving complete details of preparation of inoculum &fermentation medium, selection of raw materials & microorganism, fermentation and recovery CO3- App (16)
- Or
- (b) Louis Pasteur once said, “In the fields of observation, chance favours only the prepared mind”. How does this statement, made in 1854, apply to Alexander Flemings discovery of penicillin? Explain its detailed Industrial production and its modifications CO3- App (16)
14. (a) Imagine that you are selected as a Research scholar in a Prestigious Institution and you are asked to write a review on Bio pesticides. Carry on with your scientific temper and rationality CO3- App (16)
- Or
- (b) Suppose you are selected as a Research scholar in a Prestigious Institution and you are asked to write a review on production of SCP . Carry on with your scientific temper and rationality CO3- App (16)

- 15 (a) Animal cell cultures are used to generate valuable products based on their own genetic information or due to genes transferred into them (transgenes) using rDNA technology. Discuss the various products of Animal cell culture CO1- U (16)
- Or
- (b) Therapeutic antibodies have become the predominant class of new drugs developed in recent years. Justify and explain the experimental procedure for the production of monoclonal Antibodies CO1- U (16)

