



3. (a) Write short notes on the following :-  
(i) Spargers  
(ii) Molasses  
(iii) Primary Screening (4×3=12)
- (b) Name the microbial producers and give the uses of the different types of proteases. (3)
4. (a) Give the industrial producing organism and write about the fermentation process involved in the production of the following :-  
(i) Riboflavin  
(ii) Ethanol (6×2=12)
- (b) Outline the contributions of Louis Pasteur in the field of industrial microbiology. (2)
- (c) Define Aspect Ratio. (1)
5. (a) Discuss the different methods of enzyme immobilization. (5)
- (b) Why are hops used in beer manufacture ? (2)
- (c) Describe various methods for strain improvement. (5)
- (d) What are baffles and their utility ? (2)
- (e) Who coined the term 'Antibiotic' ? (1)
6. (a) What is the role of penicillin acylase in the pharmaceutical industry ? (3)
- (b) How is glutamic acid accumulated in the fermentation medium by wild type strains ? (3)
- (c) Describe the industrial production of Bt Toxin. (5)
- (d) What is Lyophilization and its importance ? (2)
- (e) Give the importance and utility of an Airlift Fermenter. (2)