

Oxygen delivery in foam control system..

Recovery and purification..

Factors consider when designing a fermenter..

### **BIO204 Final term paper**

1. Write any Two Risks described by Collins? 2
2. What is Sterilization? 2
3. Requirements to run a fermenter? 2
4. How sterilized product exhaust air? 3
5. Factors consider when designing a fermenter? 5
6. Richards' RAPID METHOD FOR DESIGNING OF STERILIZATION CYCLES? 5
7. Discuss Oxygen delivery system and Foam control system? 10
8. Discuss batch and continuous sterilization process, filter Sterilization of Media, Sterilization of the Fermenter, Feeds and of Liquid Wastes. 10

### **Bio204**

Mcqs In  $X_t = x_0 e^{\mu t}$ ,  $X_0$  what is  $x_0$  and  $x_t$  in this equation

Nitril or butyl rubbers are normally used for these (seals.) yamcqtha

11. If  $q_p$  is strictly growth related then it will change as  $\mu$  with  $D$  and, thus, the product concentration remain (constant.) Baqi b mid k pprssy thy kuch quiz sy thy kuchbongy thy .....  
Questions:

Components of fermenter What is

chemostate(2) product recovery 3mrks ,

sterilization 2 mrks , del factor equation, 3

mrksfermenr parts 3 mrks requirements for

fermentation 5 mrks

Roffler et al. (1984) techniques 5 mrks

Effluent treatment 5mrks how to

sterilize air exhaust 2 mrks

#### **Bio204**

Main objectives to recover production (2)

2 function of agitation system (3)

Delta factor write full equation (2)

Richards rule briefly explain (3)

Roffler 5 technique for the recovery of the product (5)

Explain batch and continuous culture (5)

Explain recovery and purification of product (5)

Steady state of chemostate and quasi state of fed batch ka difference and effect of  $Y$ ,  $\mu_{max}$ , and  $K_s$  on biomass (4)

#### **Bio204**

1)what is sterilization

2)two major functions of agitation system 3)sterilization of exhaust air.

4)discuss batch and cont culture briefly

5)recovery and purification

6)Roffler at al technique

7)6 basic suggestions to consider site for treating industrial waste

8)diff b/w the quasi state and steady state.?also give effects of  $Y$ ,  $\mu_{newmax}$  and  $k_s$  on biomass concentration

9) Yoshida et al technique for culture

#### **Bio204**

Factor depend on the product of the productivity

Five technique of roffleetl for in recovery fermentation product

Relatiobtwnqp and according to fed batch cultr

Batch cultr and continuous cltrbrifly explain

Convert Monod equation to linear equ

Recovery and purification factor on the fermentatio

Sterilization and its technique

Recovery and purification factor on the fermentation

#### **Bio204**

1. What is sterilization?

2. Difference between batch culture and continuous culture ?
3. How can we calculate both live and dead cells? 4. Relation of  $q_p$  and  $M$  (mew) in fed batch culture.
5. Sterilization of exhaust air.
6. Basic suggestions to individual site for treating industrial waste.
7. Roffler 5 technique for the recovery of the product.
8. Factors consider when designing a fermentor.
9.  $X_t/X_o = e^{-kt}$ , define  $x_t$  and  $kt$ .
10. Explain recovery and purification of product.

**Bio204 paper 1-9-18**

32. 2. What is Sterilization? 2
  33. The main objective of the first stage for the recovery? 2
  34. Equation for overall Del factor ? 2
  35. Function of compressor? 3
  36.  $X_t/X_o = e^{-kt}$ , define  $x_t$  and  $kt$ ? 3
  37. Why Bottom entry agitators tend to require more maintenance than top entry impeller? 3
  38. 6 basic suggestions to consider site for treating industrial waste? 3
  39. Richards' RAPID METHOD FOR DESIGNING OF STERILIZATION CYCLES? 5
  40. Roffler et al. (1984) techniques 5 marks
  41. Q7: Briefly discuss batch and continuous culture. (5)
- Explain in detail the recovery and purification of fermenter products.(10)