KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food.Engg) 2013 Admission

III[rd] Semester Final Examination- December -2014

Cat. No: Fdqu2103 **Marks: 50.00**

Title: Biochemical Engineering (1+1) **Time: 2 hours**

I Answer all Questions **(10 x 1=10)**

1. What is CSTRs
2. What is an enzyme
3. What is DO
4. What is K_M
5. what is K_{cat}
6. Define doubling time of a microorganism
7. _____is a section of chemistry that involves using relationships between reactants and/or products in a chemical reaction to determine desired quantitative data
8. _____is the study of the chemical reactions that are catalysed by enzymes
9. _____is required for energy production via oxidative phosphorylation
10. The catalytically inactive enzyme (without cofactor) is termed as _____

II Write short notes on any FIVE questions **(5x 2=10)**

1. What is meant by homogenous reactions
2. Explain the numbering scheme of enzymes
3. What is Sterilization
4. Explain precipitation
5. Schematically represent CSTR
6. What are enzyme inhibitors
7. Explain three methods of enzyme immobilization

III Write short notes on any FIVE questions **(5x 4=20)**

1. Explain the steps involved in fermentation process
2. Describe the relevance of strain improvement for fermentation process
3. What is the relevance of heat transfer calculation in a fermenter
4. Explain two type s of diffusion in mass transfer
5. Explain the steps involved in transport of oxygen from gas bubble to cell in a fermentation process
6. What are the classification of enzymes .Explain

7. Explain the advantages and disadvantages of using prokaryotic and eukaryotic cells as host for fermentation

IV Write an essay on any ONE **(1 x 10=10)**

1. With a schematic diagram depict the functional parts of a fermenter
2. Explain liquid -liquid mass transfer and derive an expression for overall mass transfer coefficient

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