KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food. Engg) 2011 Admission
III rd Semester Final Examination- January/February -2013

Cat. No: Fdqu.2103

Marks: 80

Title: **Biochemical Engineering (1+1)**

Time: 3 hours

I. Answer the following

(10x1=10)

1. The protein part of an enzyme is called …………..
2. Baffles are used to avoid …………………..in a fermentor
3. What is activation energy?
4. Name two sulfur containing amino acids.
5. Inactive enzymes are called ………………
6. Substrate concentration at which velocity is half Vmax is called ……………..
7. What is Damkohler Number?
8. In an Air lift fermentor riser and downcomer are separated by ……………..
9. The maximum number of substrate molecules which can be converted to products per molecule enzyme per unit time is represented by ……………………
10. Define enzyme activity.

II. Answer any ten questions

(10x3=30)

1. Give the single letter code for the following amino acids: Tryptophan, Phenylalanine, Glutamine.
2. Explain Fischer lock-and-key hypothesis of enzyme reaction.
3. Explain Respiratory Quotient.
4. Why is aeration important in a fermentor?
5. What is the difference between disinfection and sterilization?
6. Explain CSTR.
7. What are essential amino acids? Give two examples
8. How peptide bonds are formed?
9. What is Km? Give its significance.
10. What are the common solid-liquid separation processes in product recovery?
11. Significance of Reynolds Number.
12. What are filter aids? Give examples.

III. Answer any six questions

(6x5=30)

1. How are enzymes classified?
2. Why antifoaming agents are essential in fermentors? Give example.
3. Describe the applications of enzymes in food industry.
4. How does bubble behavior in a fermentor affect Kla?

5. What are the factors affecting oxygen transfer rate in a fermenter?
6. Explain filter sterilization of liquid media.
7. What are the factors affecting enzyme activity?
8. Explain pH measurement and control in a fermentor.

IV. Answer any one   (10x1=10)

1. Write in detail about the secondary structure of proteins.
2. Describe in detail Michaelis Menton Kinetics.