KERALA AGRICULTURAL UNIVERSITY

B.Tech (Food. Engg)-2012 and Previous Admission
III rd Semester RE-Examination-December -2015

Cat. No: Fdqu.2103 **Marks: 80.00**
Title: Biochemical Engineering (1+1) **Time: 3 hours**

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

1. The P^H at which the molecule carriers no net charge is known as _____
2. The area of an enzyme where catalysis occurs is referred as _____
3. The driving force for the sedimentation is _____
4. Characteristic operating parameters for continuous reactors are dilution rate and _____
5. What is the function of a sparger
6. Name one acidic amino acid
7. What do you mean by absolute specificity
8. Give an example of enzyme inhibitor
9. What is doubling time
10. What is Peclet number

II Write short notes on any TEN questions **(10 x 3=30)**

1. Give the chemical structure of any two essential amino acids
2. What is the effect of enzyme on the activation energy of a molecule
3. Define Respiratory Quotient
4. What is the advantages of filtration over sedimentation
5. Differentiate batch reactors from CSTR
6. Define power number
7. What are cofactors? Give two examples
8. Explain radiation methods of sterilization
9. Significance of Michealis Menten Equation
10. Explain Darcy's law
11. What are the advantages and disadvantages of continuous sterilization
12. List out applications of fermenter in food processing industry

III Write short essay on any SIX questions **(6 x 5=30)**

1. Explain the induced fit theory of enzyme –substrate reaction
2. What are the factors which control oxygen requirements of fermentation process

3. Explain the mass transfer steps involved in the transport of oxygen from bulk liquid to cell
4. Explain dynamic gasing out method for measurement of Kla
5. Explain the batch sterilization of liquid media
6. Discuss the role of exit gas analysers in the monitoring and control of fermentation process
7. Explain temperature control in a fermentor
8. Explain β −pleated structure of protein

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

1. Write in detail about the tertiary structure of proteins
2. Describe various methods used for determination of mass transfer coefficient