

**Code No: C5105****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.TECH I SEMESTER EXAMINATIONS APRIL/MAY-2012****BIO-PROCESS ENGINEERING  
(CHEMICAL ENGINEERING)****Time: 3hours****Max.Marks:60****Answer any five questions  
All questions carry equal marks**

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1. Explain the principles of bioprocess? Discuss about the kinetics of biomass production.
2. Distinguish between aerobic and anaerobic fermentations, and describe them in detail.
3. Write a note on proteins and explain about protein synthesis in cells.
4. What are the salient features that you consider as important in the design of a bioreactor? Explain.
5. How do you monitor and control, dissolved oxygen & P<sup>H</sup> in a bioreactor? Explain.
6. Discuss about adsorption and electrophoresis techniques in detail.
7. Explain about the thermal death kinetics of micro organisms in a fermentation process
8. Discuss about the following:
  - a) Sedimentation
  - b) Centrifugation
  - c) Filtration.

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