Code No: RR222301 **Set No. 1**

II B.Tech II Semester Supplementary Examinations, November/December 2005
BASIC INDUSTRIAL BIOTECHNOLOGY
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the unit operations involved in an integrated bioprocess system. [16]
2. Describe the following:
   (a) Working stock culture.
   (b) Primary stock cultures.
   (c) Lyophilized cultures. [6+5+5]
3. Bring out the importance of TCA cycle in aminoacid production? [16]
4. Enumerate the role of precursors and inducers in secondary metabolite production? [16]
5. Discuss the importance of recombinant proteins in human health care sector? [16]
6. Briefly write detailed account on isolation of different mutants for industrial use? [16]
7. Give detailed account of polyhydroxybutarate production by microbial system starting from glucose as carbon source? [16]
8. (a) What are semi synthetic penicillins.
   (b) Give their importance over penicillins in disease control. [8+8]

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Code No: RR222301 **Set No. 2**

II B.Tech II Semester Supplementary Examinations, November/December 2005
BASIC INDUSTRIAL BIOTECHNOLOGY
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Briefly write a historical overview of industrial fermentation process. [16]
2. Describe the necessity of inoculum development in fermentation process? [16]
3. Write the importance of agricultural raw materials in the production of various primary metabolites with regard to production economics? [10+6]
4. Name some economically important antibiotics and mention the industrial antibiotic producing microorganisms? [10+6]
5. Discuss the importance of quality control in production of pharmaceutically important enzymes? [16]
6. Define auxotrophs and describe their role in primary metabolite production with examples? [4+12]
7. How biotechnology can be beneficial for the conversion of vegetable oils to value added products? [16]
8. What is the importance of interferon in human health care and illustrate their production processes? [16]

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Code No: RR222301 **Set No. 3**

II B.Tech II Semester Supplementary Examinations, November/December 2005
BASIC INDUSTRIAL BIOTECHNOLOGY
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain what is biotechnology and enumerate the importance of biotechnology in industrial development. [4+12]
2. Describe the necessity of inoculum development in fermentation process? [16]
3. Write the improtance of the following in biotech industry:
   (a) TCA cycle
   (b) Glycolysis
   (c) Gluconic acid
   (d) Glutamic acid [4x4]
4. Write short notes on:
   (a) General Media composition for vitamin B12.
   (b) Importance of aeration and agitation in vitamin B12 production.
   (c) Crystallization of Vitamin B12. [6+5+5]
5. Write short notes with examples on:
   (a) Constitutive enzymes.
   (b) Inducible enzymes.
   (c) Extracellular and enocellular enzymes. [4+6+6]
6. (a) Write the importance of induced mutants in improving the yield of secondary metabolites.
   (b) Describe in detail the isolation of induced mutants with an example. [8+8]
7. Give detailed account of polyhydroxybutarate production by microbial system starting from glucose as carbon source? [16]
8. Briefly write notes on:
   (a) Importance of high fructose syrup.
   (b) Processing of different raw materials used for high fructose syrup production.
   (c) Various enzymes and their producing organisms involved in high fructose syrup production. [5+6+5]

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Code No: RR222301 **Set No. 4**

II B.Tech II Semester Supplementary Examinations, November/December 2005

BASIC INDUSTRIAL BIOTECHNOLOGY

(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions

All Questions carry equal marks

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1. Enumerate the role of microorganisms in a bioprocess. [16]
2. What are the important criteria to select the agricultural waste materials as raw materials for fermentation? [16]
3. Write in detail the production of phenyl alanine by fermentation process and bring out its commercial importance? [10+6]
4. (a) Define aromatics.
   (b) Describe the properties of aromatic compounds.
   (c) Give the outline details biotechnological production of aromatic compounds [6+5+5]
5. Write the importance of enzymes in economizing the industrial development? [16]
6. Define auxotrophs and describe their role in primary metabolite production with examples? [4+12]
7. Illustrate the role of Azolla as biofertilizer in rice crop improvement? [16]
8. Describe briefly:
   (a) Influenza vaccine.
   (b) Hepatatis B vaccine.
   (c) Polio vaccine.
   (d) Diphtheria vaccine. [4x4]

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