

**2005 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY**

IV B.TECH I SEMESTER REGULAR EXAMINATIONS  
**METABOLIC ENGINEERING**  
(BIO-TECHNOLOGY)

NOVEMBER 2005

TIME: 3 HOURS  
MARKS: 80

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Answer any FIVE Questions  
All Questions carry equal marks

**MARK [5\*16]**

1. Write short notes on:
  - (a) Passive diffusion
  - (b) Facilitated diffusion
2. Describe in detail the primary screening involved in strain selection with example.
3. Describe
  - (a) Differential regulation by ISO enzymes.
  - (b) Gene dosage.
4. Explain mixed or sequential Bioconversions with suitable examples.
5. Describe Induction / Repression phenomena in E.coli with examples.
6. Describe Enzyme inhibition and factors involved in it.
7. How does mutation effect the enzyme production? List out the factors involved in optimization of mutants for high yield protein production?
8. Explain the Fermentation parameters involved in production of wine from yeast.