

2006 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

IV B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS

**BIOSENSORS AND BIO ELECTRONICS
(BIO-TECHNOLOGY)**

APRIL / MAY 2006

TIME: 3 HOUR
MARK: 80

ANSWER ANY FIVE QUESTIONS ALL QUESTIONS CARRY EQUAL MARKS

1. Write in detail about types of biosensors and their applications in various industrial & research areas.
2. Write in detail the types of membranes used in biosensors, their working mechanisms and limitations.
3. Write short notes on the following:
 - (a) Calorimetric transducers
 - (b) Piezoelectric transducers
 - (c) Mechanical transducers
 - (d) Electronics based transducers.
4. Write in detail the principles and applications of various transducers in biotechnology sector.
5. Write short notes on applications of biosensors in
 - (a) Clinical Industry
 - (b) Medicine and Healthcare
 - (c) Agriculture and food
 - (d) Environmental monitoring.
6. Write short notes on:
 - (a) Molecular switches
 - (b) Mechanisms of unit assembly
 - (c) Molecular arrays.
7. Write in brief about potential developments and advantages of using a biomolecular computer.
8. Discuss the components and working mechanism of a biomolecular photonic computer and it's commercial prospects.