

Code: 9A23704

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

**BIOSENSORS & BIOELECTRONICS**

(Biotechnology)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) What is a biosensor? Using an illustration explain the components of a typical biosensor.  
(b) What is the role of bio-receptor in a biosensor?
- 2 (a) Explain about the different types of analytes that can be used with a biosensor.  
(b) Describe the role of membranes in a biosensor, give examples.
- 3 (a) Explain essential features of a biosensor and what is the criteria to select a specific type of a biosensor.  
(b) Describe the characteristic properties of different types of transducers used for biosensors.
- 4 Explain the following:  
(a) Amperometric biosensor.  
(b) Piezoelectric biosensor.
- 5 (a) How are biosensors used in health care industry? Name a few of them and their purpose.  
(b) What is a glucose biosensor; explain how it works to give analytical information.
- 6 Elaborate on the necessity for employing low-cost biosensors in industry, use one industry example.
- 7 (a) Briefly explain the area of biomolecular computing.  
(b) Elaborate about the development of microarrays as memory stores.
- 8 (a) What is photonic biomolecular memory? Explain how this technology be used in information processing.  
(b) Discuss about the commercial prospects of developing biomolecular computing systems.

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