Name : .....

Roll No. : .....

Invigilator's Signature : .....

2011

BIOMEDICAL SENSOR AND MEMs TECHNOLOGY

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Answer any *five* of the following questions.

1. a) Write the names of three different types of flow transducers and their application in Biomedical field. 6

   b) Briefly describe about the fibre optic based immunosensor. 8

2. a) Write down the working principle of glucose sensor with neat diagram. 9

   b) Enumerate the five different applications of strain gauge transducer in medical field. 5

3. a) Classify different types of biopotential electrode. Explain briefly with diagram. 9

   b) How would you measure the O_2 content in blood ? 5

4. a) What do you mean by BSN ? 2

   b) Briefly explain about the protocols and standards of BSN. 6

   c) Why information security and signal interferences are important in the development of BSN ? 6

5. a) What do you mean by specific ion electrode ? 3

   b) How can this electrode be used as pH electrode ? 3

   c) Explain the working principle of thermistor & RTD. 8

6. a) What is MOSFET ? Write down the operating principle of En-FET. 8

   b) Write down the various application of BIOMEMs in medical field. 6

7. a) What is smart materials ? Give some examples of smart materials. 5

   b) Describe the micromolding technique for fabrication of MEMs. 9