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# MANIPAL INSTITUTE OF TECHNOLOGY

(A Constituent Institute of MAHE – Deemed University)

Manipal – 576 104



## THIRD SEMESTER B.E. DEGREE MAKE-UP EXAMINATIONS – JULY 2008

**SUBJECT: BIOMEDICAL INSTRUMENTATION (BME 205)**

(REVISED CREDIT SYSTEM)

Tuesday, July 29, 2008: 2.00 p.m.- 5.00 p.m

**TIME: 3 HOURS**

**MAX. MARKS: 100**

### Instructions to Candidates:

1. Answer any FIVE full questions.
2. Draw labeled diagram wherever necessary

1. (a) What is a transducer? Write a note on Thermistors and resistance temperature detector (RTD). 10  
(b) What is a strain gauge? Explain the Unbonded type of strain gauge in detail. 10
2. (a) Explain the unipolar limb lead configuration for the measurement of ECG with neat figures. 10  
(b) With a neat figure, explain the electromyograph. 10
3. (a) What is fibrillation? Explain the type of defibrillation electrodes used. 10  
(b) What is a pacemaker? Explain the asynchronous pacemaker in detail. 10
4. (a) Explain the principle and block diagram of ultrasonic Doppler shift blood flowmeter. 10  
(b) Explain how blood pressure can be measured with a sphygmomanometer. 10
5. (a) Write a note on spontaneous and stimulated emission. 10  
(b) With a neat figure, explain the working of Nd-YAG laser. 10
6. (a) Explain any one method of accident prevention in detail. 10  
(b) Explain any one type of recorder in detail. 10

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