

No. of Printed Pages : 03

Roll No.

AA-203

M. Tech. EXAMINATION, May 2017

(First Semester)

(B. Scheme) (Re-appear Only)

(BME)

BME-505

BIOMEDICAL INSTRUMENTATION

Time : 3 Hours]

[Maximum Marks : 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt any *Five* questions. All questions carry equal marks.

1. What are the components of main instrument system ? How can it be used for diagnosis of disease and therapeutic applications ? **20**

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P.T.O.

2. Discuss the electrode theory. Also explain the various bioelectric potentials with the type of electrodes used to measure them. **20**
3. Write short notes on the following : **20**
- (a) Transfer function
 - (b) Frequency response of a filter
 - (c) Frequency aliasing
 - (d) Noise reduction.
4. (a) Discuss the design of hemodialysis machine. **10**
- (b) Explain the design of Electro surgical generator. **10**
5. What are the different physiological parameters adaptable to biotelemetry ? Discuss the components of biotelemetry system. **20**
6. Elaborate the process of radiation therapy. What are the physiological effects of electric current and the shock hazards from electrical equipment ? **20**

7. What are the different tests and instrumentation for the mechanics of breathing ? Discuss the respiratory diagnosing equipment. **20**
8. Write down the instrumentation scheme for EEG and explain their functional circuits. **20**