Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_

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**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **14EI2017** | **Duration :** | **3hrs** |
| **Sub. Name :** | **BIOMEDICAL INSTRUMENTATION** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain in detail about electrical conduction of human heart and also highlight the instrument features which is used for recording an ECG. | CO1 | 16 |
| b. | Relate the different types of measurements. | CO1 | 4 |
| (OR) | | | | |
| 2. | a. | Examine the physical structure of the cell and its functions with neat diagram. | CO1 | 12 |
| b. | Recognize the various components involved in medical instrumentation system. | CO1 | 8 |
|  |  |  |  |  |
| 3. | a. | State and explain the working principle of electromagnetic blood flow meter and its advantages with neat diagram. | CO1 | 12 |
|  | b. | Identify the importance of transit time to measure blood flow. | CO2 | 8 |
| (OR) | | | | |
| 4. | a. | Elaborate the various components of the instrument which is used for recording the electrical activity of the brain. | CO3 | 12 |
|  | b. | Outline the characteristics of various wave patterns of EEG signal. | CO3 | 8 |
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| 5. | a. | Sketch the block diagram of basic audiometer and discuss the various blocks involved in it. | CO2 | 12 |
|  | b. | Illustrate the principle of Fick’s method for measurement of cardiac output. | CO1 | 8 |
| (OR) | | | | |
| 6. |  | Summarize the importance of various defibrillators with necessary circuits. | CO1 | 20 |
|  |  |  |  |  |
| 7. | a. | Explain the working principle of demand pacemaker with the help of block diagram. | CO1 | 14 |
|  | b. | Outline the features of clinical flame photometer with suitable diagram. | CO1 | 6 |
| (OR) | | | | |
| 8. | a. | Illustrate the construction and working of Ventilator in biomedical instrumentation. | CO3 | 12 |
|  | b. | Explain the structure of automated continuous flow type biochemical analysis system. | CO2 | 8 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Analyze the working principle of an X ray machine with the help of block diagram. | CO1 | 20 |

ALL THE BEST