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



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

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| **Code :** | **17BM3001** | **Duration :** | **3hrs** |
| **Sub. Name:** | **ADVANCED MEDICAL 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 with neat sketch anatomy and physiology of central nervous and peripheral nervous system. | CO1 | 15 |
| b. | What are resting and action potentials? | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | Explain the physiology of the cardiovascular system. | CO1 | 10 |
| b. | Draw the diagram of the respiratory tract and describe the physiology of the respiration system. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Give the detailed information of how the EEG signal originates from cells. | CO2 | 10 |
|  | b. | Draw the waves of EEG and write about its significance. | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Evaluate the various lead systems for measuring ECG from the body. | CO3 | 10 |
|  | b. | Draw the block diagram for computerized EMG measurement system and explain the various observations measured and the diagnosis that are carried out. | CO3 | 10 |
|  |  |  |  |  |
| 5. | a. | With relevant equations evaluate the working and measurement produce of Plethysmograph? | CO4 | 12 |
|  | b. | Explain the principle of working of Ventilators. | CO5 | 8 |
| (OR) | | | | |
| 6. |  | Give the details on operation of heart lung machine and artificial kidney machine. | CO5 | 20 |
|  |  |  |  |  |
| 7. |  | Draw the block diagram of Computer tomography scanner and explain its operation with emphasis on image reconstruction. Also give the merits and demerits of the scanner. | CO6 | 20 |
| (OR) | | | | |
| 8. | a. | Mention the Importance and need for pacemakers. What is meant by defibrillator? With the neat block diagram and explain the different types of Defibrillator. | CO5 | 12 |
|  | b. | With a simple diagram explain the working of angiogram. | CO5 | 8 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain about audiometers in bio-medical instrumentation. | CO6 | 8 |
|  | b. | List the different types of waveforms used for stimulation of Muscle and nerves? Draw the block diagram of a typical Electrotherapeutic stimulator and explain. | CO3 | 12 |

ALL THE BEST