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



**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **18BM3001** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ADVANCED MEDICAL INSTRUMENTATION DESIGN** | **Max. marks :** | **100** |

**ANSWER ANY FIVE QUESTIONS (5 x 16 = 80 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Discuss the Anatomy and Physiology of Human Digestive System. | CO1 | 8 |
| b. | Elaborate the Physiology of Central Nervous System. | CO1 | 8 |
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| 2. | a. | Draw the structure of a living cell of our body and explain its constituents. | CO2 | 8 |
| b. | List out the various types of bio potentials originated from the human body and brief any two with necessary figures of signals generated from them. | CO2 | 8 |
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| 3. | a. | Explain the working of piezo electric transducer as arterial pressure sensor. | CO3 | 8 |
| b. | What are the requirements of a good physiological transducer and outline the operation of any one type of physiological transducers with relevant sketches. | CO3 | 8 |
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| 4. | a. | Discuss in detail about any one direct measurement method of blood pressure. | CO4 | 8 |
| b. | Discuss about cardiac pacemaker in detail with necessary sketch. | CO4 | 8 |
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| 5. | a. | Draw the respiration cycle waveform. | CO5 | 2 |
| b. | Discuss the regulation mechanism of respiration system in human body with a neat sketch. | CO5 | 6 |
| c. | Elaborate in detail about the ventilators with neat diagram and summarize the different modes of ventilation. | CO5 | 8 |
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| 6. | a. | Explain the working principle of Heart Lung Machine with neat diagram. | CO4 | 8 |
| b. | Discuss the principle of operation of Plethysmography. | CO4 | 8 |
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| 7. |  | Discuss the various lead systems used for ECG measurement and draw the output waveform. | CO2 | 16 |
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| **COMPULSORY QUESTION (1 x 20 = 20 Marks)** | | | | |
| 8. | a. | Summarize in detail with necessary diagram about the design of EEG amplifiers for the measurement of EEG. | CO6 | 12 |
| b. | Discuss in detail the clinical significance, electrode placement, recording methods and waveforms of EEG | CO6 | 8 |