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

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

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| **Code :** | **15EI2007** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MEDICAL DIAGNOSTIC EQUIPMENT** | **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. | List the diagnostic statements of ECG records. | CO2 | 7 |
| b. | Analyze various errors due to the asymmetry of velocity profiles in blood flow. | CO1 | 8 |
| c. | In an ECG waveform, PQRST represents atrial depolarization and ventricular re-depolarization. The effect of atrial depolarization is less significant. Justify the case. | CO2 | 5 |
| (OR) | | | | |
| 2. | a. | Compare and contrast the various temperature measurement techniques. | CO1 | 8 |
| b. | Comment on the electromagnetic type blood flow meters and its advantages. | CO3 | 12 |
|  |  |  |  |  |
| 3. | a. | Analyse the brain waves and its significance in diagnosing nuero disorders. | CO1 | 10 |
| b. | Explain measurement of EEG, measuring electrodes and standard positioning of electrode system | CO3 | 10 |
| (OR) | | | | |
| 4. | a. | Define acuity of hearing and the diagnosis of audio disorders. | CO3 | 6 |
| b. | Expand abbreviations: EOG, ERG, PPG, PCG. | CO1 | 4 |
| c. | List the various methods of heart rate measurement with a neat sketch. | CO2 | 10 |
|  |  |  |  |  |
| 5. | a. | Analyze the indirect measurement of blood pressure and its advantages. | CO3 | 10 |
| b. | Depict the instrumentation system for flame photometers. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Discuss the automatic blood pressure measuring apparatus using Korotkoffs method. | CO3 | 10 |
| b. | Comment on the working of cardio tachometer based on matched QRS filter for heart rate measurement. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Outline the stress testing instrumentation and ST segment measurements. | CO2 | 8 |
| b. | Suggest a suitable diagnostic device for the above problem and describe its working. | CO2 | 12 |
| (OR) | | | | |
| 8. | a. | Comment on the principle and application of liquid chromatograhy. | CO1 | 12 |
| b. | Show the pictorial representation of pH measurement in blood diagnosis. | CO3 | 8 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Portray a clear layout/pictorial representation of blood gas analyser with the various parameters measured using the same. | CO3 | 10 |
| b. | Elaborate on various methods of blood cell counting with necessary diagrams. | CO1 | 10 |