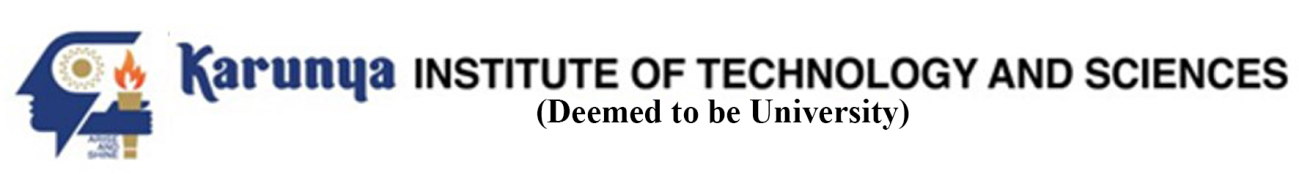
Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



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

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| --- | --- | --- | --- |
|  |  |  |  |
| **Code :** | **15EI2016** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MEDICAL THERAPEUTIC EQUIPMENT** | **Max. marks :** | **100** |

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Describe the programmable pacemaker with the help of a neat block diagram. | CO1 | 10 |
| b. | Draw the circuit diagram of a fixed rate pacemaker and explain its working principle. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Differentiate between internal and external defibrillators. | CO1 | 10 |
| b. | Give a note on double square pulse defibrillator. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Discuss the different types of Oxygenators with their merits and demerits. | CO1 | 10 |
| b. | Define electrotherapy. Draw the current waveforms and explain the types of currents used in electrotherapy. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the principle and working of extra corporeal shockwave lithotripsy with the help of diagram. | CO2 | 10 |
| b. | Explain diaphragm pacing for chronic ventilator insufficiency. | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | Draw the block diagram of a hemodialysis machine and explain the importance of each building block. | CO1 | 15 |
| b. | Distinguish between hemodialysis and peritoneal dialysis. | CO2 | 5 |
| (OR) | | | | |
| 6. | a. | Explain the mechanism of ventilation and the need for use of artificial ventilation. | CO2 | 10 |
| b. | Describe the working of versatile electro-diagnostic therapeutic stimulator with a neat block diagram. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Write short notes on transcutaneous electric nerve stimulator. | CO2 | 10 |
| b. | Mention the advantages of using ultrasound for therapeutic purposes and explain the working of an ultrasonic therapy unit with the help of a block diagram. | CO2 | 10 |
| (OR) | | | | |
| 8. |  | Explain the principle of operation of CO2 laser with the help of a diagram. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain the working of helium neon laser with its main applications. | CO3 | 10 |
| b. | Enumerate five applications of lasers in medicine. | CO3 | 10 |