



SEVENTH SEMESTER B. TECH. (INSTRUMENTATION AND CONTROL ENGG.)

END SEMESTER DEGREE EXAMINATIONS, NOVEMBER - 2018

SUBJECT: BIOMEDICAL EQUIPMENTS [ICE 4016]

TIME: 3 HOURS

MAX. MARKS: 50

Instructions to candidates

- Answer **ALL** questions.
- Missing data may be suitably assumed.

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| 1A | Define the terms: i) Tidal volume ii) Vital capacity | 2 |
| 1B | What is pneumotachometer? State the underlying principle of different types of pneumotachometers. | 3 |
| 1C | Compare any five respiratory therapy equipment. | 5 |
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| 2A | What are the advantages of pure tone audiometry? | 2 |
| 2B | With the help of a neat diagram explain the process of surgical diathermy. | 3 |
| 2C | Explain the meaning of masking in audiometry. | 2 |
| 2D | What is lithotripsy? With the help of a neat sketch explain extracorporeal shock wave lithotripsy. | 3 |
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| 3A | What is the reason for creating an airless contact between the transducer and skin surface in ultrasonic imaging? | 2 |
| 3B | Draw the diagram of a pulsed ruby laser technique and explain its working. | 3 |
| 3C | With the help of a neat sketch explain the B-scan display mode in ultrasonic imaging. | 2 |
| 3D | Briefly explain rigid endoscope. | 3 |
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| 4A | What is NICU? Mention the different equipment used in NICU. | 2 |
| 4B | What do you mean by oxygenators in heart lung machine? Explain the different types of oxygenators. | 3 |
| 4C | What are the basic elements of intensive care monitoring for cardiac care unit? | 2 |
| 4D | Draw the schematic of an artificial kidney and explain. | 3 |
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| 5A | What are the applications of a medical thermograph? | 2 |
| 5B | What is an infusion pump? Briefly explain any three types. | 3 |
| 5C | Explain the principle and functioning of automatic optical method of blood cell counting. | 5 |
