

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering - SEMESTER-V • Examination – SUMMER • 2015

Subject Code: 3350303**Date: 12-05-2015****Subject Name: Critical Care Instrumentation****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make Suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of programmable & Communication aids are strictly prohibited.
5. Use of only simple calculator is permitted in Mathematics.
6. English version is authentic.

- Q.1** Answer any seven out of ten. **14**
1. ICU.
 2. Pacemaker.
 3. Telemetry.
 4. Defibrillator.
 5. Cardiac arrhythmia.
 6. Bed side monitor.
 7. Ventilator.
 8. Nebulizer.
 9. Oxygenerator.
 10. Heart lung machine.
- Q.2** (a) Describe the layout of ICCU in brief. **03**
- OR
- (a) Draw the layout of ICU. **03**
- (b) Enlist different equipments used in critical care unit. **03**
- OR
- (b) Describe the basic concept of NICU. **03**
- (c) State principle of central monitoring system. **04**
- OR
- (c) Draw the block diagram of bed side monitor. **04**
- (d) Describe the principle of DC defibrillator. **04**
- OR
- (d) Describe AED- defibrillator. **04**
- Q.3** (a) State the classification of external pacemaker. **03**
- OR
- (a) Define the ventricular fibrillation in brief. **03**
- (b) Enlist different leads of pacemaker and explain any one of them. **03**
- OR
- (b) Give the classification of implantable pacemaker. **03**
- (c) Describe the mechanism of respiration. **04**
- OR
- (c) Define the mean airway pressure and tidal volume. **04**
- (d) Describe the PEEP in brief. **04**
- OR
- (d) Enlist different types of ventilator. **04**
- Q.4** (a) State principle of heart lung machine. **03**
- OR

- (a) State the principle of Oxygenerator. **03**
(b) Describe modes of ventilation. **04**

OR

- (b) Give the classification of telemetry. **04**
(c) Draw and explain single channel telemetry system. **07**

Q.5

- (a) Describe the principle of anesthesia machine **04**
(b) Describe the ventricular synchronous demand type pacemaker. **04**
(c) Give difference between bed side and central monitoring system. **03**
(d) Give classification of modulation techniques. **03**
