

**B.TECH SEM – VIII (2007 COURSE) (BIOMEDICAL ENGG.) :**

**WINTER - 2017**

**SUBJECT: ADVANCED MEDICAL INSTRUMENTATION**

**Day: Tuesday**  
**Date: 21/11/2017**

**Time: 02.30 PM TO 05.30 PM**  
**Max. Marks: 80**

**W-2017-2704**

**N.B:**

- 1) **Q. No. 1 and Q. NO. 5 are COMPULSORY.** Attempt **ANY TWO** questions from each section.
- 2) Answer to the two sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.
- 4) Assume suitable data, if necessary.

**SECTION-I**

- Q.1**
- a) What is the use of suction machine? Draw the diagram and explain the working of suction machine. **(05)**
  - b) Explain the ocular implants with applications. **(05)**
  - c) What is the use of Holter equipment? Explain the basic principle of Holter equipment. **(04)**
- Q.2**
- a) What is cardiocograph? Explain abdominal foetal electrocardiogram? **(07)**
  - b) Explain in detail image guided system. **(06)**
- Q.3**
- a) Explain the neuro stimulator with its applications. **(06)**
  - b) Give details of implantable pumps **(07)**
- Q.4**
- a) Explain heart lung machine with diagram. **(07)**
  - b) What is the use of balloon pump? Explain it with detail. **(06)**

**SECTION-II**

- Q.5**
- a) What is the need of anaesthesia machine? List and explain the parts of anaesthesia machine. **(05)**
  - b) What are the general design considerations of sensors? **(05)**
  - c) What is use of endoscopy? List the types of endoscopes and its applications. **(04)**
- Q.6**
- a) What do you mean by apnea? What is the normal respiration rate? Explain the use of apnea monitor. **(06)**
  - b) What is the principle of syringe pump? Explain syringe pump and peristaltic pump with neat diagram. **(07)**
- Q.7**
- a) Explain blood glucose sensor with constructional details. **(07)**
  - b) Explain the CO2 monitoring with the help of neat diagram. **(06)**
- Q.8**
- a) What is the use of dental chair? Explain with all accessories dental chair. **(06)**
  - b) What is electrophoresis? Explain the use of electrophoresis with neat diagram. **(07)**

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