

**B.Sc. IN ANAESTHESIA AND CRITICAL CARE
TECHNOLOGY (BACT)**

Term-End Examination

December, 2015

BAHI-082 : BIOMEDICAL INSTRUMENTATION

Time : 3 hours

Maximum Marks : 70

Note : *There are two parts Part A and Part B. Part A consists of 8 questions. Each carry 8 marks. Attempt any five questions from Part A. Part B consists short note of 30 marks.*

PART - A

1. (a) Write common safety features of Electrical equipment used in operation theatres. **4+4=8**
(b) List classes of Electrical equipments used.
2. (a) What are main sources of Fire and Explosion in OT ? **2+2+4=8**
(b) What are safeguards ?
(c) Name three essential elements to produce combustion and explosion.
3. (a) What is principle of Diathermy or Electrocautery ? **2+2+4=8**
(b) What are Hazards of same ?
(c) Describe types of Electrocautery.
4. (a) What is principle of Vapouriser ? **2+2+4=8**
(b) What are two main types of vapouriser ?
(c) The output or concentration of anaesthetic agent depends on what factors ?

5. (a) What are the stages of clinical measurement by Biomedical equipment using Microprocessor devices. $4+4=8$
(b) What are advantages of microprocessors ?
6. (a) What are different methods for measuring Blood Pressure ? $4+4=8$
(b) What are advantages/disadvantages of each type ?
7. (a) How are gases supplied in large hospitals ?
(b) What are essential components of piped medical gases and vacuum systems in large hospitals ? $4+4=8$
8. (a) Describe different types of devices used for accurate delivery of fluids/drugs in hospitals. $4+4=8$
(b) What would be suitable for 1 year old child weighing less than 10 kg for major surgery requiring fluids / drugs ?

PART-B

9. Write short notes on any five of following each carries 6 marks. $5 \times 6 = 30$
- (a) Flowmeter devices and types of flow.
 - (b) Methods of measuring temperature in OT.
 - (c) Saturated vapour pressure.
 - (d) Different methods of humidifying inspired/anaesthetic gases.
 - (e) Principles of defibrillator device.
 - (f) What is pH ? How is it measured ?
 - (g) Common sources of errors in pulse oximetry measurement.
 - (h) Uses of pressure regulator devices in anaesthetic machines.