

[LB 0212]

AUGUST 2012

Sub. Code: 1412

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY  
SECOND YEAR**

**PAPER – II PRINCIPLES OF PERFUSION TECHNOLOGY - I**

**Q.P. Code : 801412**

**Time: Three hours**

**Maximum: 100 marks**

**Answer ALL questions.**

**I. Elaborate on:**

**Pages Time Marks  
(Max.)(Max.)(Max.)**

- |   |   |    |    |
|---|---|----|----|
| 1. Describe the evolution of cardiopulmonary bypass and its uses in cardiac surgery.  | 7 | 20 | 10 |
| 2. Discuss in detail the principles of extra-corporeal gas exchange.  | 7 | 20 | 10 |
| 3. What is IABP? Explain in detail about the principle, functions, indications, contra-indications and complications of IABP. | 7 | 20 | 10 |

**II. Write Notes on:**

- |   |   |    |   |
|---|---|----|---|
| 1. Objectives of an ideal oxygenator.   | 4 | 10 | 5 |
| 2. What are the components of membrane oxygenator? Explain its functions.         | 4 | 10 | 5 |
| 3. What are the various methods used to reduce myocyte damage during reperfusion. | 4 | 10 | 5 |
| 4. What are the different types of hypothermia.                                   | 4 | 10 | 5 |
| 5. Explain pulsatile flow.  | 4 | 10 | 5 |
| 6. Describe the components of extra corporeal circulation.                        | 4 | 10 | 5 |
| 7. Explain the functions of heat exchangers.                                      | 4 | 10 | 5 |
| 8. What are the effects of preload and after load on centrifugal pump flow?       | 4 | 10 | 5 |

**III. Short Answers on:**

- |   |   |   |   |
|---|---|---|---|
| 1. What is bubble trap?   | 2 | 4 | 3 |
| 2. Explain siphonage principle.   | 2 | 4 | 3 |
| 3. Define reaction time.  | 2 | 4 | 3 |
| 4. Name few commonly used sites for temperature monitoring.                           | 2 | 4 | 3 |
| 5. What is bellow pump?   | 2 | 4 | 3 |
| 6. Describe the functions of flow meter.  | 2 | 4 | 3 |
| 7. Roller pumps.  | 2 | 4 | 3 |
| 8. What is the desirable pore size of arterial filter, gas filter, cardiotomy filter? | 2 | 4 | 3 |
| 9. Explain how to return the cardiotomy blood.  | 2 | 4 | 3 |
| 10. What are the main components of cardioplegic solution.                            | 2 | 4 | 3 |

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