

**B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**  
**SECOND YEAR**  
**PAPER II – PRINCIPLES OF PERFUSION TECHNOLOGY – PART – I**

*Q.P. Code: 801412*

**Time: Three Hours**

**Maximum: 100 Marks**

**Answer all questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Explain about ultra filtration? Its significance, methods used in CPB. Draw a circuit of modified ultra filtration.
2. Write note on blood conservations techniques and also draw a standard CPB circuit with parts.
3. What is priming and its aims? Different types of priming solutions used in CPB in detail.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Write 2 different Cardioplegia techniques in detail. What are the advantages of a Blood CP?
2. How do you Calibrate the heart lung machine and check occlusion, state methods to set Occlusion?
3. What are the different sites of Cannulation? Explain about venous and arterial Cannulation in detail.
4. Write a note on centrifugal pump with diagram and mention its advantage over roller Pump.
5. What is membrane oxygenator? Write some characteristic's of an oxygenator and its history till date.
6. Management of air embolic event in CPB, and how u will avoid such incidents.
7. Explain the strategies involved in preservation of Myocardium in Cardiac surgery.
8. Write some essential parameters to be monitored on CPB not less than 7 parameters.

**III. Short answers on:**

**(10 x 3 = 30)**

1. a) Normal ACT value = ..... seconds.  
b) 1 ml Heparin = ..... IU.  
c) Write the formula for circulating hematocrit on pump.
2. What is ECMO and mention its types in short?
3. Essential Cardioplegia additives and its roles in Myocardial preservation.
4. a) Expand MICS, ANH, LVAD    b) Adult arterial filter ..... microns,  
c) 1 ml potassium .....Meq.
5. What is CAD? What are the factors which causes CAD?
6. What is IABP? Its uses and mention its contraindications.
7. Hypothermia merits and demerits three points each.
8. Composition of Delnido Cardioplegia with base solution. What is the safe duration of it?
9. Indications of Fem-Fem bypass and femoral canulation.
10. Write an note on tetology of Fallot and mention some pediatric oxygenators commonly used?

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