

[AHS 0321]

MARCH 2021

Sub. Code: 1412

(AUGUST 2020 EXAM SESSION)

B.Sc. CARDIO PULMONARY PERFUSION CARE TECHNOLOGY**SECOND YEAR (Regulations 2010-2011 & 2014-2015)****PAPER II – PRINCIPLES OF PERFUSION TECHNOLOGY – PART – I*****Q.P. Code : 801412*****Time: Three hours****Answer ALL Questions****Maximum: 100 Marks****I. Elaborate on:****(3 x 10 = 30)**

1. Myocardial preservation Strategies and Techniques Involved in Cardiac surgery till date.
2. History and development of Cardiopulmonary Bypass Till date and also Elaborate on Gibbons contribution to CPB in clinical practice.
3. Write a note on IABP with diagram. Indications, Contraindications and complication of it.

II. Write notes on:**(8 x 5 = 40)**

1. What is CAD? Risk factors of CAD? And draw a coronary Artery Anatomy.
2. Adult and Paediatric perfusion differences in all Aspects.
3. How to choose Cannula Arterial and Venous? Temperature Based Flow Rates Chart?
4. Safety Devices used in CPB and Mention its Functions.
5. Ideal characteristics of a Pump and Oxygenator
6. Differences between Roller pump and centrifugal Pump.
7. Draw a Extracorporeal circuit with all parts and Label it and Perfusion Pre bypass checklist chart.
8. What is priming? What is static Priming? Aims of it and mention various types of priming solutions?

III. Short answers on:**(10 x 3 = 30)**

1. What is MUF? When and where it is done? Formula for Volume to be removed during this process.
2. Address this case : 1 yr old child with VSD, having weight of 5.3 kg, Height 120 cm, Hb 10.1%. What oxygenator, packs, cannula, prime will you choose and manage the case? Also calculate circulating haematocrit.
3. Renal protocol in CPB.
4. Describe the principles of Venous Drainage and Causes of Poor Venous Return.
5. Describe the principles of Heat exchangers and tubing used in CPB.
6. What are the sources of Cerebral Emboli during CPB?
7. Mention the Formula for the following: (a) circulating Haematocrit, (b) Amount of RBC to be added in prime, (c) Heparin to be added in Prime.
8. Mention all the Parameters Monitored during CPB.
9. Advantage of Blood Cardioplegia over crystalloid Cardioplegia.
10. Correction of Hyperkalemia and Bicarbonate.
