

**VINAYAKA MISSION'S RESEARCH FOUNDATIONS, SALEM  
(Deemed to be University)**

**B.Sc. (Perfusion Technology) DEGREE EXAMINATION  
August 2018  
Third Year**

**PERFUSION TECHNOLOGY - ADVANCED**

Time: Three hours

Maximum: 75 marks

**I. Write an essay on any ONE of the following: (1 x 20 = 20)**

1. Write an essay on deep hypothermic circulatory arrest (DHCA) with pH state management in paediatric procedures.
2. How will you perform a safe CPB?

**II. Write short notes on any TWO of the following: (2 x 10 = 20)**

3. Explain graphically the oxy-haemoglobin dissociation curve (sigmoidal graph).
4. What kind of oxygenators and tubings are preferably used in ECMO and why?
5. What is modified ultrafiltration? Explain.
6. The methods of priming that are normally used in paediatric patients.

**III. Write short answers on any SEVEN of the following: (7 x 5 = 35)**

7. What are the safety devices that are used during bypass?
8. Explain the methods to manage venous drainage in minimally – invasive cardiac surgery.
9. What are the cannulation techniques and sites normally followed for aortic surgeries (aneurysms and dissections)?
10. Write notes on recent advances made in CPB.
11. How can coagulopathies due to CPB be avoided?
12. What is meant by open and closed systems in membrane oxygenation? Explain.