Sree Chitra Tirunal Institute for Medical Sciences & Technology

DM Cardiac Anesthesiology

July 2006

Paper I

Part I

Max Marks 100

Time 3 hrs

Short Essays;

1. Describe the relationship between pressure, flow velocity and cross-sectional area of each of the following vascular beds: arteries, arterioles, capillaries, venules and veins
2. Describe with diagrams the ultrastructure of the working myocardial cell
3. What are the bronchopulmonary segments of the right and left lungs? Why are the anatomical differences between the two lungs important to the anesthesiologist?
4. What are the various cardiac performance parameters? What are the parameters which are directly measured at the bedside, and what are the derived values? What is the margin of error between the various methods of measurement?
5. How is the left ventricular pressure-volume loop derived? What is the clinical significance of the end-diastolic pressure –volume relationship?
6. Describe the anatomy of the coronary circulation and the various angiographic views seen on cardiac catheterization
7. What are the side-effects of heparin therapy? List both the mild and severe complications, and the various methods to counter them
8. Describe the energy metabolism of the resting heart and the changes produced by hypoxia.
9. What are the changes in hypertrophic cardiomyopathy? What is the mechanism of myocardial ischemia in these patients?