1. During which phase of the cardiac cycle does most coronary blood flow take place? Why? Draw a sketch illustrating your understanding of this concept.

2. If an atherosclerotic lesion occurs at the bifurcation of the left (main) coronary artery (LCA) and the left anterior descending artery (LAD), what tissues are affected by ischemia, hypoxia, anoxia and necrosis? Draw a simple sketch illustrating this bifurcation and with an X mark the tissues of the heart that are impacted adversely.

3. What are the 3 most prominent, primary, modifiable risk factors in the development of cardiovascular diseases? Of these 3, which is the most important given that it is still the leading cause of preventable death in the US? Identify a 4th primary modifiable risk factor emphasized by Stephen Blair of the Aerobics Institute in Dallas, TX. List 2 non-modifiable risk factors.

4. Draw a simple schematic illustrating the relationship between the Ross & Glomset (& Harker!) and Steinberg & Witztum hypotheses of atherosclerosis development. What cell type is the primary regulator of lipoprotein metabolism and content in the blood?

5. In Dr. Bruce Kottke’s (Mayo Clinic) bathtub analogy for cholesterol metabolism, what does the faucet represent? What does the drain represent? What does the bathwater level represent? What are bad types of cholesterol carriers that deposit cholesterol in the periphery? What is the good type of cholesterol carrier that picks up cholesterol and delivers it to the liver to be incorporated into bile?