

## CPB Questions

1. What is the maximum acceptable arterial cannula pressure gradient?
  - a. 250 mmHg
  - b. 100 mmHg
  - c. 500 mmHg
  - d. 50 mmHg
  
2. A 100kg patient is cooled to a rectal temperature of 18 degrees Celsius. What is the maximum safe circulatory arrest time?
  - a. 30-45 minutes
  - b. 45-60 minutes
  - c. 75-90 minutes
  - d. 90-120 minutes
  
3. Hypotension upon initiation of bypass is due to:
  - a. Sudden Hemodilution
  - b. Hypothermia
  - c. Catecholamine Release
  - d. Protamine Administration
  
4. On bypass, a high line pressure may be due to:
  - a. The arterial cannula tip placed against the aortic wall
  - b. The arterial cannula occluded by the Aortic crossclamp
  - c. An Aortic dissection
  - d. All of the Above
  
5. Which of the following is NOT a benefit of moderate Hypothermia on CPB?
  - a. Reduced metabolism and oxygen demand
  - b. A margin of safety in the event of an equipment failure
  - c. Maintains a better heart rhythm
  - d. Less blood trauma

6. When warming a patient from Deep Hypothermic Circulatory Arrest (DHCA), which answer describes the best rewarming strategy?
  - a. Rewarm at a rate of 1 degree Celsius per 10 minutes
  - b. Rewarm at a rate of 1 degree Celsius per 3 minutes
  - c. Rewarm at a rate of 1 degree Celsius per minute
  - d. Rewarm the patient as fast as possible.
  
7. Which answer best describes the response of CO<sub>2</sub> to a patient's temperature?
  - a. As patient's temperature decreases, CO<sub>2</sub> becomes more soluble
  - b. As patient's temperature decreases, CO<sub>2</sub> becomes less soluble
  - c. As patient's temperature increases, CO<sub>2</sub> solubility remains the same
  - d. As patient's temperature increases, CO<sub>2</sub> becomes more soluble
  
8. Prior to weaning from CPB, which of the following statements should be true?
  - a. There should be a stable heart rhythm
  - b. There should be no bleeding from inaccessible areas
  - c. There should be good myocardial contractility
  - d. All of the above
  
9. Which of the following describes the best sequence of events following introduction of a massive air embolism on CPB?
  - a. Stop CPB, patient in steep trendelenberg, remove aortic cannula and purge ascending aorta of air, retrograde cerebral perfusion, re-institution of CPB with hypothermia and pharmacologic cerebral protection
  - b. Stop CPB, remove aortic cannula and purge ascending aorta of air, re-institution of CPB in steep trendelenberg position, with hypothermia and pharmacologic cerebral protection
  - c. Systemic hypothermia and pharmacologic cerebral protection, stop CPB, patient in steep trendelenberg, remove aortic cannula and purge ascending aorta of air, retrograde cerebral perfusion, re-institution of CPB
  - d. Stop CPB, patient in steep trendelenberg, retrograde cerebral perfusion, re-institution of CPB with hypothermia and pharmacologic cerebral protection
  
10. Which of the following is NOT an indicator that a cannula-induced aortic dissection may have occurred?
  - a. Sudden, unexplained decrease in venous return to the CPB pump
  - b. Profound drop in systemic blood pressure
  - c. Sudden increase in arterial line pressure
  - d. Sudden increase in systemic blood pressure