**Answers to Discussion Topics, Chapter 32, The Cardiovascular System**

| Suggested Answers for Topics for Discussion | Learning Objectives |
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| 1a. Students’ responses should include the following:   * The heart contractions become less effective due to loss of muscle tone and elasticity. * Loss of elasticity in the muscle layer of the arteries means they are unable to dilate and constrict as demands change. * Loss of elasticity in veins causes them to stretch out, leading to varicose veins. * Decreased number of red blood cells that decreases the amount of oxygen being delivered to the tissues. * Decreased white blood cells will place you at a higher risk for infections.   1b. Students’ responses should include the following:   * Getting regular exercise. * Eating a diet low in saturated fats and cholesterol. * Avoiding secondhand smoke. * Do not begin to smoke, or stop smoking if you do. * Maintain your weight within a normal range for your body type. * Keep good control over chronic health problems such as hypertension and diabetes. | 3, 4 |
| 2a. Students’ responses should include the following:   * The coronary arteries that supply the heart with oxygen and nutrients become narrowed due to atherosclerosis. * The narrowed arteries will not allow enough blood to pass through them. * Angina pectoris occurs when the heart is deprived of enough oxygen. This deprivation causes chest pain. * When one or more coronary arteries become completely blocked, blood is prevented from reaching parts of the heart, and the muscle tissue dies (a heart attack). * Myocardial infarction means death of heart muscle.   2b. Students’ responses should include the following:   * It is a painless test. * Sensors placed on their chest, arms, and legs will show how effectively their heart’s electrical activity is. | 5, 6 |