

**Transport in Mammals:**

- 1) What is mass transport? (1)
- 2) Describe and explain the shape of the oxyhaemoglobin dissociation curve? (3)
- 3) What is cooperative binding? (2)
- 4) What is the Bohr effect and use a diagram to help support your answer? (3)
- 5) Compared to the normal oxyhaemoglobin curve, where would the following curves be and why?
  - a. Fetal Haemoglobin (2)
  - b. A person/animal living at high altitudes? (2)
  - c. An animal living under water? (2)
  - d. Myoglobin? (2)
  - e. A person who is exercising? (2)
  - f. Carbon monoxide poisoning? (2)
- 6) How many oxygen atoms can each haemoglobin bind to? (1)
- 7) Describe the double circulatory system? (3)
- 8) Draw a fully labelled diagram of the structure of the human heart? (6)
- 9) Which arteries supply the heart muscle with blood and where do they branch from? (2)
- 10) Describe the cardiac cycle? (4)
- 11) What are the different heart valves and what is their function? (3)
- 12) What are the chordae tendineae? (1)
- 13) Draw a graph and label it and use it to explain how pressure and volume changes on the left side of the heart take place during the cardiac cycle? (6)
- 14) What is cardiac output? (2)
- 15) Why do athletes have a lower resting heart rate? (2)

- 16) What is the normal heart rate for a healthy adult? (1)
- 17) Why is an irregular heartbeat dangerous? (2)
- 18) Why is the left ventricle bigger and more muscular than the right? (2)
- 19) What problems can occur if a baby is born with a hole in their septum? (2)
- 20) Why is the heart myogenic? (1)
- 21) Describe the electrical activity in the heart including the roles of the SAN, AVN, Bundle of His and Purkinje fibres? (4)
- 22) Compare the structure, composition and function of arteries, veins and capillaries? (6)
- 23) How are the capillaries adapted for their function? (4)
- 24) What are fenestrations in capillaries and why are they useful? (2)
- 25) What are arterioles and venules? (1)
- 26) Describe how the action of calf muscles can help to improve venous return back to the heart? (2)
- 27) What other forces/factors help to improve venous return back to the heart? (2)
- 28) What is Deep Vein Thrombosis? How does it form and why can it be dangerous? (3)
- 29) What are varicose veins and how do they form? (2)
- 30) State and explain 5 factors which contribute to cardiovascular (arterial) disease? (5)
- 31) Using a labelled diagram, explain how tissue fluid is formed and drained? (6)
- 32) What is tissue fluid and what is its composition? (2)
- 33) What are oncotic and hydrostatic pressures? What role do they play in tissue fluid formation and drainage? (4)
- 34) What is the lymphatic system? Why is it important? (3)
- 35) Where does the lymphatic system rejoin the circulatory system? (1)
- 36) What are the similarities between lymph vessels and veins? (2)
- 37) What is a hyperbaric oxygen chamber and where can it be used? (4)

**Total: /106**