OCR AS/A-level Year 1 Biology A exam practice answers

**9 Transport in animals**

**1 (a)** The sinoatrial node creates a stimulus. The wave of excitation passes over the walls of the atria, causing a contraction. This enters the atrioventricular node and excitation is delayed. Excitation passes down the bundle of His to the apex, then passes up the walls of the ventricles, causing a contraction. [5]

**(b) (i)** The heart rate appears to increase and is less efficient at pumping blood. [2]

**(ii)** The patient feels thumping in the chest, and feels tired and breathless. [2]

**2** Smooth muscle contracts to reduce size of lumen. This reduces blood flow and maintains blood pressure. Elastic fibres recoil the walls, bringing the lumen back to the original diameter. [4]

**3 (a)** Hydrostatic pressure at the arterial end is caused by the contraction of the (cardiac) muscle in the walls of the ventricles. [2]

**(b)** Pressure at the venous end has been used up overcoming resistance and some of the fluid is lost to make tissue fluid. [2]

**4** An open circulatory system allows blood to flow outside the vessels. Blood circulates around the tissues and cells. The subject cannot maintain a high blood pressure and cannot direct the flow of blood. [3]