|  |
| --- |
| **A-level Biology – Year 11 transition work**  **The circulatory system**  **Quick questions**   1. Arteries, veins and capillaries; (3) 2. Capillaries; (1) 3. Lung; (1) 4. To keep blood flowing one way / prevent blood flowing backwards; (1) 5. Into the ventricles; (1) 6. The coronary arteries; (1) 7. They carry blood away from the heart; (1) 8. Four; (1) 9. Carbon dioxide / monoxide; (1) 10. When it is rapidly respiring e.g. through exercise; (1)   **Total 12 marks**  **Examination questions**  **Q1.**  (a)     1.      (Carry) oxygen / glucose;  *Accept: oxygenated blood*  *Ignore references to removing waste products*  *Ignore references to arteries ‘pumping’ blood*  2.      (To) heart muscle / tissue / cells / myocytes.  *Must be supply to heart or cardiac*  **2**  (b)     (i)      **A**;  *Accept: A on its own even if outside box*  *Reject if two (or more) letters given*  **1**  (ii)     **H**;  *Accept: H on its own even if outside box*  *Reject if two (or more) letters given*  **1**  (c)     (Aorta)  1.      (is) close / directly linked to the heart / ventricle / pressure is higher / is very high;  2.      (Aorta has) elastic tissue;  *Accept elasticity*  *Ignore reference to muscle*  3.      (Aorta has) stretch / recoil.  ***Q*** *Reject: contracts / relaxes / pumps*  *Accept: for mp 2 and mp 3, converse for small arteries if qualified by little / less*  **3**  **[7]**  **Q2.**  (a)     (i)      C;  *Ignore name of vessel*  **1**  (ii)     A;  *Ignore name of vessel*  **1**  (b)     Strongest/stronger contractions;  *Accept most muscle in wall / thickest/thicker muscular wall*  *A comparative statement is needed*  *Answer must be in context of producing force and not resisting it*  **1**  (c)     1.      Blood flows from left ventricle to right ventricle/ mixing of oxygenated and deoxygenated blood;  2.      Lower volume of (oxygenated) blood leaves left ventricle/flows into aorta/C  OR  Lower pressure in blood leaving left ventricle/flowing into aorta/C  OR  Less oxygen in blood leaving left ventricle/aorta/C;  **2**  **[5]**  **Q3.**  (a)     Endothelium / epithelium;  *Allow endothelial / epithelial*  *Reject: epidermis / endodermis*  **1**  (b)     Measurement divided by 8;  **1**  Allow answer in range of 3-3.3 for two marks;  *Correct answer gains 2 marks.*  **1**  (c)     (i)      Stretches / ’expands’ under high pressure / when ventricle contracts / systole and recoils / ’springs back’ under low pressure / when ventricle relaxes / diastole;  ***Q*** *References to aorta contracting or relaxing negates marks for stretch and recoil.*  Smooths blood flow / maintains blood pressure / reduces pressure surges;  *Stretch and recoil without reference to blood pressure etc. = one mark.*  *Stretch and recoil to smooth blood flow etc. = two marks*  *Ignore references to aorta withstanding blood pressure or not being damaged.*  **2**  (ii)     (Muscle) contracts;  *‘It’ in answer = muscle*  **1**  (Arteriole) constricts / narrows / alters size of lumen / reduces / regulates blood flow (to capillaries);  *Allow converse (muscle) relaxes and (arteriole) dilates etc / increase blood flow etc.*  *Ignore references to pressure*  **1**  (d)     (i)      Large / increase in (total) cross sectional area / friction / resistance;  **1**  (ii)     (More) time for exchange of substances;  **1**  **[9]** |