B3.2 Transport (HL)

What the Cell · DP Biology · worksheet · HL statements B3.2.11–18

Name _____ **Date** _____ **Total** _____ / 40

About 40 minutes, or one section at a time. The number of marks shows how many separate points to make.

Section A: Recall

8 marks

1 **Define** tissue fluid. B3.2.11 **[1]**

2 **State** one component of plasma that is almost absent from tissue fluid. B3.2.12 **[1]**

3 **Name** the valve between the left atrium and the left ventricle. B3.2.15 **[1]**

4 **State** where the sinoatrial node is found. B3.2.16 **[1]**

5 **Outline** two features of lymph vessels. B3.2.13 **[2]**

6 **State** two features of companion cells. B3.2.18 **[2]**

Section B: Understanding

16 marks

7 **Explain** how tissue fluid is formed and reabsorbed along a capillary. B3.2.11 **[3]**

8 **Explain** the advantage of a double circulation over a single circulation. B3.2.14 **[3]**

9 **Explain** why the wall of the left ventricle is thicker than the wall of the right ventricle. B3.2.15 **[2]**

10 **Explain** how root pressure is generated. B3.2.17 **[3]**

11 **Explain** how sieve tube elements are adapted for the flow of sap. B3.2.18 **[3]**

12 **Explain** the importance of the delay at the atrioventricular node. B3.2.16 **[2]**

Section C: Working with evidence

10 marks

All data in this section are invented for practice. The patterns are realistic.

13 B3.2.16

Pressures were recorded in the left side of the heart of a person at rest during one cardiac cycle of 0.8 s.

Time / s	0	0.1	0.2	0.3	0.4	0.5	0.6
Left atrium / mmHg	6	9	5	7	10	5	6
Left ventricle / mmHg	5	8	70	118	90	4	5
Aorta / mmHg	80	77	75	116	100	90	85

a **State** the systolic and diastolic pressures in the aorta. **[2]**

b **Calculate** the pulse pressure. **[1]**

c **Identify** one time when the atrioventricular valve is open. **[1]**

d **Identify** the time at which both valves are shut. **[1]**

e **Deduce**, with a reason, whether the semilunar valve is open at 0.3 s. **[2]**

f **Calculate** the heart rate. **[1]**

g **Explain** why the pressure in the aorta stays high while the ventricle is relaxed. **[2]**

Section D: Longer answer

6 marks

14 **Describe** the events in the left side of the heart during one cardiac cycle, starting with the firing of the sinoatrial node. B3.2.16 **[6]**

What the Cell. Original questions written for this course.