Level of Organisation

Mark Scheme 1

Level	IGCSE(9-1)
Subject	Biology
Exam Board	Edexcel IGCSE
Module	Double Award (Paper 1B)
Topic	Structure and Functions in Living Organisms
Sub-Topic	Level of Organisation
Booklet	Mark Scheme 1

Time Allowed: **57 minutes**

Score: **/47**

Percentage: **/100**

Grade Boundaries:

9	8	7	6	5	4	3	2	1
>90%	80%	70%	60%	50%	40%	30%	20%	10%

Question number	Answer	Notes	Marks
1 (a)	leaf;		1
(b)	made from <u>tissue(s)</u> + perform a specific function / eq;		1
(c)	The following named and labelled correctly: cell wall; cell membrane; 5 to 6 correct = 3 nucleus; chloroplast; 3 to 4 correct = 2 cytoplasm; vacuole; 1 to 2 correct = 1	ignore mitochondria and ribosomes	3

Question number	Answer	Notes	Marks
2(a)(i)	tissue(s) that carry out (same) function / <u>different</u> cell types that carry out (same) function / eq;		1
(ii)	heart;		1
(iii)	1. nervous / CNS; 2. breathing / respiratory / ventilation; 3. digestive; 4. excretory / urinary; 5. skeletal; 6. endocrine / hormonal;		3 max
(iv)	reproductive / immune / lymphatic;		1

(b)			5

Process	Name of organ
ultrafiltration	kidney;
ventilation	lung;
secretion of insulin	pancreas;
secretion of hydrochloric acid	stomach;
bile production	liver;

Total 11 marks

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>3 (a)</td><td>
<table>
<tr><th></th><th colspan="3">Level</th></tr>
<tr><th>Example</th><th>organelle</th><th>organ</th><th>system</th></tr>
<tr><td>nucleus</td><td>(✓)</td><td></td><td></td></tr>
<tr><td>circulation</td><td></td><td></td><td>✓;</td></tr>
<tr><td>chloroplast</td><td>✓;</td><td></td><td></td></tr>
<tr><td>leaf</td><td></td><td>✓;</td><td></td></tr>
<tr><td>bulb</td><td></td><td>✓;</td><td></td></tr>
</table>
</td><td></td><td>4</td></tr>
</table>

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>3 (b)</td><td>
<table>
<tr><th>Order</th><th>Structure</th></tr>
<tr><td rowspan="5">smallest
↓
largest</td><td>red blood cell</td></tr>
<tr><td>white blood cell</td></tr>
<tr><td>eye</td></tr>
<tr><td>kidney</td></tr>
<tr><td>liver;;</td></tr>
</table>
</td><td>5 = 2 marks

3 = 1 mark</td><td>2</td></tr>
</table>

(Total for Question = 6 marks)

<table>
<tr><th>Question number</th><th>Answer</th><th>Notes</th><th>Marks</th></tr>
<tr><td>4 (a)</td><td>
<table>
<tr><th>Illness</th><th>Organ needed to cure illness</th></tr>
<tr><td>uremia</td><td>(kidney)</td></tr>
<tr><td>emphysema</td><td>lung(s)</td></tr>
<tr><td>coronary failure</td><td>heart;</td></tr>
<tr><td>diabetes</td><td>pancreas;</td></tr>
<tr><td>hepatitis</td><td>liver;</td></tr>
<tr><td>poor vision</td><td>cornea(s);</td></tr>
</table>
</td><td></td><td>5</td></tr>
<tr><td>(b)</td><td>bile;
emulsifies / large drops to small drops / eq;
neutralise / optimum pH / alkaline;</td><td></td><td>2</td></tr>
<tr><td>(c) (i)</td><td>genetically / gene / allele / DNA;
identical / same / eq;</td><td>ignore similar</td><td>2</td></tr>
<tr><td>(ii)</td><td>lots / no shortage / no delay / better supply / always available / eq;

no rejection / match / accepted by body / eq;

no problems with relatives / eq;</td><td>allow ref to blood type</td><td>2</td></tr>
</table>

TOTAL 11 MARKS

Question number	Answer	Notes	Marks
5(a)(i)	1. upper epidermis; 2. transparent / lets light through / no chloroplasts;	waxy cuticle is transparent = 1	2
(ii)	1. palisade; 2. densely packed / aligned vertically / eq; 3. idea of many / lots of chloroplasts; 4. sorb / take in / trap light;	ignore lots of chlorophyll	3 max
(iii)	1. spongy; 2. air spaces; 3. diffusion / movement of gases / gas exchange / eq; 4. xylem vascular bundle; 5. transport water;	Ignore phloem	3 max
(iv)	1. guard cell; 2. open/ close; 3. let in carbon dioxide / water loss / transpire / evaporate / eq;	Ignore stomata Ignore gas exchange	2 max
(b)	1. lower surface in water / upper surface exposed to air; 2. allows carbo dioxide in; 3. allows transpiration / evaporatio / water loss / eq;	Ignore gas exchange Allow converse for Mps 2 and 3	2 max
(c)(i)	20;		1
(ii)	fewer/no stomata / holes / pores / guard cells;		1

Total 14 marks