Mark scheme

Cells

Biology 0610 · Questions from Paper 1, Paper 2, Paper 3 and Paper 4

Total marks

40

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
1	1	1	1	1	1	12	4	10	8	**40**

Question 1 [1]

Answer C

Question 2 [1]

Answer D

Question 3 [1]

Answer B

Question 4 [1]

Answer A

Question 5 [1]

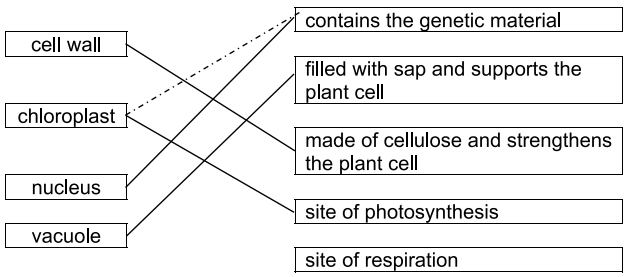
Answer B

Question 6 [1]

Answer B

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Question 7 [12]

7(a)	*plant cell labelled from top to bottom:* cell wall ; cytoplasm ; chloroplast ; cell membrane ;	**4**	
7(b)	**part** **funtion**  ;;;;	**4**	one mark per part **A** line between chloroplast and contains the genetic material **R** other additional lines
7(c)	conduction / transport / transfer of, water / mineral ions ; support ;	**2**	
7(d)(i)	gravitropism ;	**1**	
7(d)(ii)	roots would grow downwards / **AW** ;	**1**	

Question 8 [4]

8(a)	mitochondrion ; (aerobic) respiration ;	**2**	**A** release energy **A** cytoplasm for MP1 with correct function for MP2 i.e. allows / location of, (biochemical / metabolic) reactions / cell processes **ecf** MP2 from incorrect structure in MP1
8(b)	length of the (cell structure), in image / picture / photomicrograph / diagram and magnification ;	**1**	
8(c)	0.75 (μm) ;	**1**	**A** 7.5×10^{-1}

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Question 9 [10]

9(a)(i)	leaf / leaves ;	1	
9(a)(ii)	**J** cell wall ; **K** vacuole ; **L** cytoplasm ;	3	
9(a)(iii)	*any one from:* contain the, genetic material / DNA / chromosomes / genes / alleles ; *idea of* controls (activities of) the cell ;	1	
9(a)(iv)	**M** drawn in cytoplasm ;	1	
9(a)(v)	(site of aerobic) respiration / release of energy ;	1	
9(b)	*any three from:* contains, chloroplasts / chlorophyll, which absorbs light (energy) / AW ; cells have an irregular shape ; large(r)surface area ; (spongy mesophyll) tissue / cells, loosely packed ; creates (air) spaces ; ref. to diffusion of carbon dioxide ; ref. to gas exchange ; ref. to vascular bundles ;	3	

Question 10 [8]

10	(a)	nucleus: **1** controls (activities in) the cell / AW; **2** contains, chromosomes / genes / alleles / genetic information / DNA; **3** controls how cells, develop / divide / reproduce / grow; **4** cell membrane: **5** forms a barrier / separates a cell from surroundings; **6** allows / controls, movement of (named) substance(s), across / in / out; keeps contents of cell inside / keeps cytoplasm intact / AW;	max 4	**I** 'brain' of cell / 'tells cell what to do' **MP1 A** ref to making proteins **A** makes ribosomes e.g. O_2 / CO_2 / nutrients **I** ref to shape / 'covers cell' / protects cell
	(b)	a group of cells, same type / do the same function;	1	cells are in the same place = group
	(c)	**1** mucus traps, particles / any example; **2** mucus protects lining; **3** (cilia) beat / create wave motion / wafting; **4** move, mucus / fluid away; **5** reduce risk of / stop, (named) pathogens entering lungs;	max 3	e.g. dust / bacteria / spores / virus **I** 'collects' particles
			[Total: 8]	

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