

Revision Sheet

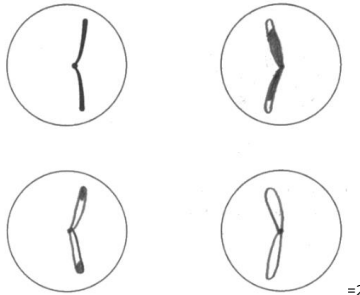
Pearson Edexcel · International A-Level · Biology · Unit 2 Cells, Development, Biodiversity and Conservation

16 vocabulary items · 23 marks of exam questions (4 questions)

Part 1 · Vocabulary review answer key. Section A wants the exact English spelling.

Question	Answer	Marks
1	acrosome	1
2	blastocyst	1
3	calcium	1
4	cell wall	1
5	egg	1
6	endemic	1
7	heterozygosity index	1
8	Index of diversity	1
9	magnesium	1
10	Magnification	1
11	Meiosis	1
12	Mitosis	1
13	Phloem	1
14	sperm	1
15	tissues	1
16	Xylem	1

17(a)(i)	<p>The only correct answer is B covered in 80S (large) ribosomes</p> <p><i>A is not correct because rER is covered in 80S (large) ribosomes</i></p> <p><i>C is not correct because rER forms vesicles containing polypeptides</i></p> <p><i>D is not correct because rER forms vesicles containing polypeptides</i></p>	(1)
	<ul style="list-style-type: none"> because of water uptake / increased {volume of cytoplasm / size of vacuole} (1) (increase in size due to) {synthesis/production} of {organelles / (named) proteins / enzymes} (1) therefore {synthesis/production} of {new/more} cell {membrane / wall} (1) 	<p>ACCEPT organelles increase in size</p> <p>(3)</p>

18(a)	<p>The only correct answer is A centriole</p> <p><i>B is not correct because spindle fibres develop from a centriole</i></p> <p><i>C is not correct because spindle fibres develop from a centriole</i></p> <p><i>D is not correct because spindle fibres develop from a centriole</i></p>	(1)
18(c)	<p>An answer that includes the following points:</p> <ul style="list-style-type: none"> one or two cells correct (1) 3rd cell correct (1) 	<p><u>Example of diagram</u> explain why we are allowing after meiosis I in report</p>  <p>(2)</p>

19(a)	<p>A calculation in which:</p> <ul style="list-style-type: none"> calculation of volume of liposome (1) expressed in standard form (1) 	<p><u>Example of calculation:</u></p> <p>220893</p> <p>$2 \times 10^5 / 2.2 \times 10^5 / 2.21 \times 10^5 \text{ (nm}^3\text{)}$</p> <p>answer given to 3 sig fig</p> <p>ecf applied for mp2 for correct volume calculation using 75 as radius</p> <p>(2)</p>
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19(b)	<p>An explanation that makes reference to the following points:</p> <p>Similarities</p> <ul style="list-style-type: none"> both are single-stranded (1) both contain the bases A,U,C,G / both contain a base, phosphate group and ribose (sugar) / both contain phosphodiester bonds (1) an exon on pre-mRNA contains same base sequence as the matching exon on active mRNA (1) <p>Differences</p> <ul style="list-style-type: none"> pre-mRNA contains both introns and exons whereas active RNA only contains exons (1) active mRNA may have {fewer / different order of} exons (than pre-mRNA) (1) 	<p>ACCEPT linear</p> <p>ACCEPT both do not contain thymine ACCEPT both contain RNA nucleotides / both contain uracil</p> <p>ACCEPT both contain exons</p> <p>ACCEPT pre-mRNA contains introns whereas active RNA does not ACCEPT pre-mRNA is {longer / has more bases} than active mRNA ACCEPT pre-mRNA has recognition site for spliceosome whereas active RNA does not</p> <p>ACCEPT active mRNA has a different base sequence to pre-mRNA</p>	(4)
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20(a)	<p>An answer that includes two of the following points:</p> <ul style="list-style-type: none"> {outer / single} cell layer / trophoblast (1) inner cell mass / embryoblast / contains pluripotent cells (on the inside) (1) hollow / fluid filled / (fluid filled) cavity / blastocoel (1) 	<p>ignore totipotent</p> <p>ignore totipotent</p>	(2)
	<ul style="list-style-type: none"> (DNA methylation is the) addition of {methyl / CH₃} group(s) (1) to cytosine (1) (histone modification is the) {methylation / phosphorylation/ acetylation} of {histones / lysine} (1) (resulting in) compacting chromatin / DNA wrapped more tightly around histones (1) (resulting in) inhibition of {transcription factor / RNA polymerase} binding (1) (therefore) preventing {transcription / gene expression} (1) 	<p>ACCEPT addition of methyl base</p> <p>ACCEPT CpG site / between cytosine and guanine ignore cysteine / genes</p> <p>ACCEPT ubiquitylation / sumoylation ACCEPT {adding / removing} of acetyl groups {in histone modification / to histones / to lysine}</p> <p>ACCEPT (histone modification results in) {euchromatin / heterochromatin / supercoiling / (highly) condensed DNA} Accept converse for acetylation e.g. loosening supercoiling</p> <p>ACCEPT converse for acetylation only</p> <p>ACCEPT silencing of gene / preventing mRNA production ACCEPT acetylation can allow {activation / transcription / expression} of gene</p>	(5)