Revision Sheet

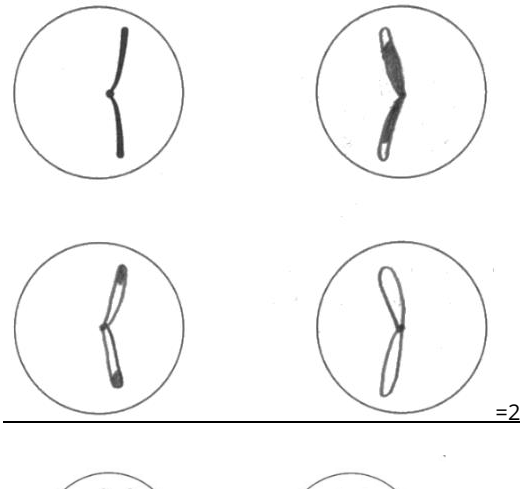
Pearson Edexcel · International A-Level · Biology · Unit 2 Cells, Development, Biodiversity and Conservation

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)	The only correct answer is B covered in 80S (large) ribosomes *A is not correct because rER is covered in 80S (large) ribosomes* *C is not correct because rER forms vesicles containing polypeptides* *D is not correct because rER forms vesicles containing polypeptides*		**(1)**
2(b)	An explanation that includes the following points: • 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)	ACCEPT organelles increase in size	**(3)**

18(a)	The only correct answer is A centriole *B is not correct because spindle fibres develop from a centriole* *C is not correct because spindle fibres develop from a centriole* *D is not correct because spindle fibres develop from a centriole*		(1)
18(c)	An answer that includes the following points: • one or two cells correct (1) • 3rd cell correct (1)	Example of diagram explain why we are allowing after meiosis I in report  =2	**(2)**

19(a)	A calculation in which: • calculation of volume of liposome (1) • expressed in standard form (1)	Example of calculation: 220893 2×10^5 / 2.2×10^5 / 2.21×10^5 (nm^3) answer given to 3 sig fig ecf applied for mp2 for correct volume calculation using 75 as radius	**(2)**

19(b)	An explanation that makes reference to the following points: Similarities • 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) Differences • 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)	ACCEPT linear ACCEPT both do not contain thymine ACCEPT both contain RNA nucleotides / both contain uracil ACCEPT both contain exons 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 splicesome whereas active RNA does not ACCEPT active mRNA has a different base sequence to pre-mRNA	**(4)**

20(a)	An answer that includes two of the following points: • {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)	ignore totipotent ignore totipotent	(2)
20(b)	An explanation that includes two of the following points: • (DNA methylation is the) addition of {methyl / CH_3} 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)	ACCEPT addition of methyl base ACCEPT CpG site / between cytosine and guanine ignore cysteine / genes ACCEPT ubiquitylation / sumoylation ACCEPT {adding / removing} of acetyl groups {in histone modification / to histones / to lysine} ACCEPT (histone modification results in) {euchromatin / heterochromatin / supercoiling / (highly) condensed DNA} Accept converse for acetylation e.g. loosening supercoiling ACCEPT converse for acetylation only ACCEPT silencing of gene / preventing mRNA production ACCEPT acetylation can allow {activation / transcription / expression} of gene	(5)