Question Number	Answer	Mark
1(a) (i)	B ;	**(1)**

Question Number	Answer	Mark
1(a) (ii)	A ;	**(1)**

Question Number	Answer	Mark
1(a) (iii)	B ;	**(1)**

Question Number	Answer	Mark
1(a) (iv)	A ;	**(1)**

Question Number	Answer	Mark
1(a) (v)	C ;	**(1)**

Question Number	Answer	Mark
***1(b)QW**	(QWC – **Spelling** of technical terms must be correct and the answer must be organised in a logical sequence) 1. *nucleolus* {disappears / breaks down} / eq ; 2. *nuclear {envelope/membrane}* breaks down / eq ; 3. *centrioles* move to (opposite) poles / *centrioles* separate / eq ; 4. {*spindle / spindle* fibres / asters} form / are visible / are produced by *centrioles* / eq ; 5. *{chromosomes / chromatids}* become visible / eq ; 6. *{chromosome / chromatid /chromatin }* condenses / DNA coils / eq ; 7. (chromosomes can be seen as) {pairs of /sister } *chromatids* / eq ; 8. correct reference to *centromere* (holding chromatids in pairs);	**(5)**

Question Number	Answer	Mark
2 (a)	1. year 1 ; 2. {more / eq } species present (in year 1) / greater variety of species ; Ignore references to abundance.	**(2)**

Question Number	Answer	Mark
2 (b)(i)	mitosis ;	**(1)**

Question Number	Answer	Mark
2 (b)(ii)	1. low genetic diversity is {few / low number of / less / eq} different <u>alleles</u> in the {gene pool / population / species} / small gene pool / eq ; 2. (asexual reproduction leads to) all offspring being {<u>genetically</u> identical / clones / same genotype / same <u>alleles</u> } ; 3. no meiosis/ no recombination of genetic material / eq; 4. idea of variation only possible as a result of mutation ;	**(2)**

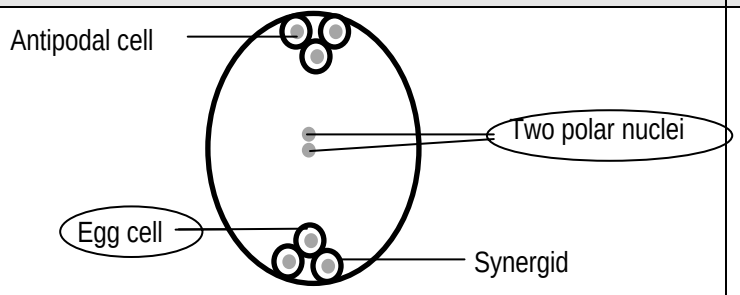
Question Number	Answer	Mark
*** 2 (c)**	(QWC – Spelling of technical terms must be correct and the answer must be organised in a logical sequence) 1. (description of how to vary the independent variable) Idea of at least 5 different nitrate (ion) concentrations ; 2. Reference to repeats at each concentration ; 3. (measuring of dependent variable) Increase in {length/mass/ height} ; 4. use plants that are genetically {similar / same} / same age / same original {height/ size / mass} of plant ; 5. & 6. Controlling abiotic factors, maximum 2 from list: • time (at least a week) allowed for growth • other mineral ions constant • temperature • light (intensity) • water provided • pH of {solution / soil} • CO_2 concentration ;; 7. idea of control described, e.g. no nitrate/ soil with no extra nitrate ;	**(5)**

Question Number	Answer	Mark
3(a)(i)	C ;	**(1)**

Question Number	Answer	Mark
3 (a)(ii)	C ;	**(1)**

Question Number	Answer	Mark
3 (b)	1. idea that chromosomes will be in the process of {decondensing /uncoiling/ becoming invisible / eq} ; 2. idea that the {nucleus / nuclear envelope(s)} is visible; 3. idea that a nucleolus may be present ; 4. idea that spindle has {contracted / broken down / absent / eq} ; 5. two {separate nuclei/masses of chromatin} now visible ; 6. idea that there will be evidence of cell plate formation ;	**(3)**

Question Number	Answer	Mark
3(c)(i)		**(1)**

Question Number	Answer	Mark
3 (c) (ii)		**(2)**

Question Number	Answer	Mark
3 (c) (iii)	Any **one** from 1. half the umber (of chromosomes) found in {body cells / somatic cells / named body cell / eq} 2. the number of chromosomes i {gametes/sex cells} 3. the nu er (of chromosomes) in a cell following meiosis ;	**(1)**