

## 6: Reproduction – Topic questions

## Paper 3

The questions in this document have been compiled from a number of past papers, as indicated in the table below.

Use these questions to formatively assess your learners' understanding of this topic.

Question	Year	Series	Paper number
2	2014	June	22
3	2016	June	32
4	2014	November	22

The mark scheme for each question is provided at the end of the document.

You can find the complete question papers and the complete mark schemes (with additional notes where available) on the School Support Hub at [www.cambridgeinternational.org/support](http://www.cambridgeinternational.org/support)

- 2 (a)** Use words from the following list to complete the passage about plant reproduction.  
You may use each word once, more than once or not at all.

<b>asexual</b>	<b>cotyledon</b>	<b>diploid</b>	<b>fertilisation</b>	<b>gamete</b>
<b>haploid</b>	<b>pollination</b>	<b>sexual</b>	<b>testa</b>	<b>zygote</b>

Living organisms must reproduce to replace organisms which die, and to supply more organisms to occupy new environments. Genetically identical offspring are produced from a single parent during the process of ..... reproduction. During ..... reproduction, a special cell called a ..... is made by one parent and fuses with a ..... from another parent. This process of fusion is called ..... and may eventually lead to the development of a seed.

[3]

**3** Flowers contain the male and female reproductive structures of a plant.

The female reproductive structure is the carpel.

The male reproductive structure is the stamen.

- (a)** Draw straight lines from the reproductive structures to show which parts of the flower are in each structure. You should draw only **five** lines.

reproductive structure	part of flower
	anther
	stigma
carpel	ovary
	petal
stamen	filament
	style
	sepal

[4]

- (c)** State **two** ways in which meiosis is different from mitosis.

- 1 .....
- .....
- 2 .....
- .....

[2]

- 4 (a) Fig. 4.1 shows a section through an insect-pollinated flower. The structures in the flower are labelled by letters.

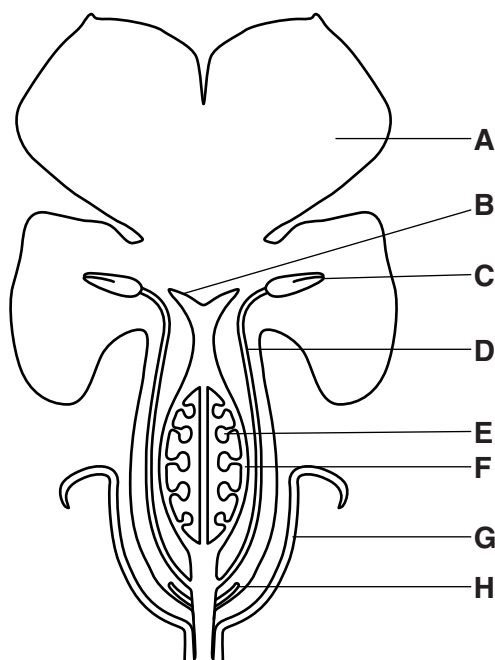


Fig. 4.1

Table 4.1 describes the functions of **four** of the flower parts.

Complete Table 4.1 by writing the letter that identifies the flower part that carries out each function.

Table 4.1

function of flower part	letter
forms the seed	
produces pollen	
protects the flower bud	
receives the pollen	

[4]

**(b)** Insect-pollinated flowers and wind-pollinated flowers are different in structure.

Complete Table 4.2 by:

- stating how the stamens and pollen of wind-pollinated flowers are different from those of insect-pollinated flowers
- giving a reason for each of the differences.

An example for the petal has been completed for you.

**Table 4.2**

flower part	difference	reason for the difference
petal	wind-pollinated flowers have small petals that are not brightly coloured	wind-pollinated flowers do not need to attract insects
stamen		
pollen		

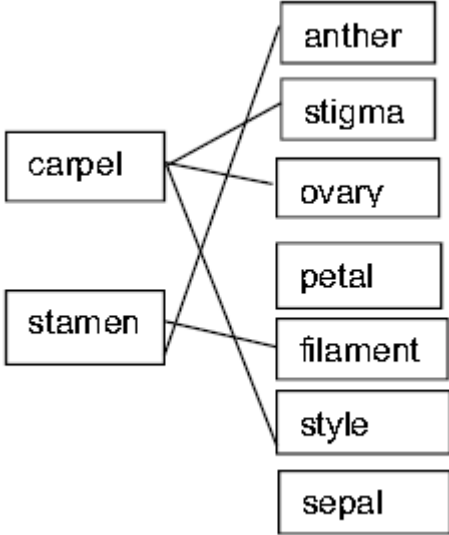
[4]

**[Total: 8]**

### Abbreviations used in the Mark Scheme:

;	separates marking points
/	alternatives
<b>I</b>	ignore
<b>R</b>	reject
<b>A</b>	accept (for answers correctly cued by the question, or guidance for examiners)
AW	alternative wording (where responses vary more than usual)
AVP	any valid point
ecf	credit a correct statement / calculation that follows a previous wrong response
<b>ora</b>	or reverse argument
( )	the word / phrase in brackets is not required, but sets the context
<u>underline</u>	actual word given must be used by candidate (grammatical variants excepted)
max	indicates the maximum number of marks that can be given

Question	Answer	Marks
<b>2 (a)</b>	asexual + sexual (both correct for one mark) gamete + gamete (both correct for one mark) fertilisation	[3]
<b>2 (b)</b>	(potatoes have) tubers; idea of tubers growing into plant; photosynthesising; plant produces more tubers; mitosis;	[3]
<b>[Total: 6]</b>		

Question	Answer	Marks
3 (a)	 <p>4 or 5 lines correct for 4 marks 3 lines correct for 3 marks 2 lines correct for 2 marks 1 lines correct for 1 mark</p>	[4]
3 (b)	<p>sperm swim through cervix / uterus ; ref. to sperm moving to / zygote passing through (after fertilisation), oviduct ; to egg (cell) / ovum ; ref. to enzymes in sperm (head) ; ref. to fertilisation / nuclei (of sperm and egg) fuse ; to form a zygote ; jelly coat changes (to prevent entry of more sperm) ; ref. to cell division / mitosis ; ref. to embryo is a ball of cells ; (embryo) implants into uterus wall ;</p>	[max 4]
3 (c)	<p>(takes place as) part of sexual reproduction ; (products) genetically different ; formation of, gametes / sex cells / eggs and sperm ; four (daughter) cells produced ; AVP ;</p>	[max 2]
[Total: 10]		

Question	Answer	Marks												
4 (a)	<table><tr><td>function of flower part</td><td>letter</td></tr><tr><td>forms the seed</td><td>E;</td></tr><tr><td>produces pollen</td><td>C;</td></tr><tr><td>protects the flower bud</td><td>G;</td></tr><tr><td>receives the pollen</td><td>B;</td></tr></table>	function of flower part	letter	forms the seed	E;	produces pollen	C;	protects the flower bud	G;	receives the pollen	B;	[4]		
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forms the seed	E;													
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4 (b)	<table><tr><th>part</th><th>difference</th><th>reason for difference</th></tr><tr><td></td><td></td><td></td></tr><tr><td>stamen</td><td>longer filaments or stamens / anthers larger / anthers loosely attached to filament / anthers or stamens hang outside other flower parts AW;</td><td>easily shaken by the wind (to release pollen) / exposed to the wind AW;</td></tr><tr><td>pollen</td><td>grains very small / light / smooth / large quantities;</td><td>easily transported by wind / increases chances of landing on stigma;</td></tr></table>	part	difference	reason for difference				stamen	longer filaments or stamens / anthers larger / anthers loosely attached to filament / anthers or stamens hang outside other flower parts AW;	easily shaken by the wind (to release pollen) / exposed to the wind AW;	pollen	grains very small / light / smooth / large quantities;	easily transported by wind / increases chances of landing on stigma;	[4]
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