16. Reproduction

16.2 Sexual reproduction

Paper 3 and 4

Question Paper

Paper 3

Questions are applicable for both core and extended candidates

1 **(a)** Complete the sentences using the words or phrases from the list.

Each word or phrase may be used once, more than once or not at all.

different from	**divide**	**embryo**	**gamete**	**fuse**
fetus	**identical to**	**meiosis**	**mitosis**	**zygote**

In sexual reproduction, each parent organism produces a sex cell called a

..... . These cells are produced by a type of cell division called

..... .

The nuclei of two sex cells ..... to form a

..... in a process called fertilisation.

The offspring are genetically ..... each other and their parents.

[5]

2 **(c)** The term sexual reproduction is in the box on the left.

The boxes on the right show some sentence endings.

Draw straight lines from sexual reproduction to the boxes on the right to make correct sentences.

Sexual reproduction	always involves only one parent.
	involves gametes.
	includes the process of fertilisation.
	only occurs in animals.
	only produces genetically identical offspring.
	results in the formation of a zygote.

[3]

3 **(a)** Define the term *sexual reproduction*.

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.....[3]

Paper 4

Questions are applicable for both core and extended candidates unless indicated in the question

4 Meiosis and mitosis are important processes in the life cycles of organisms.

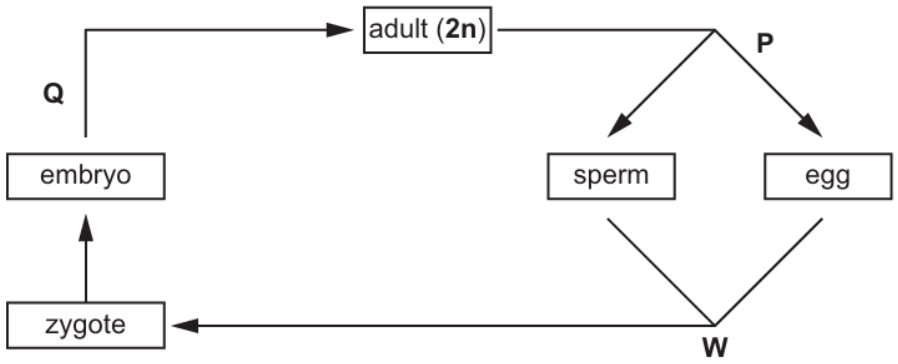
Fig. 3.1 shows the life cycles of two different organisms.

Organism **1** has a simple life cycle.

Organism **2** has a complex life cycle. It has a stage **A** that produces spores and a stage **B** that produces gametes.

In the diagrams, the haploid number of chromosomes is represented by **n.** The diploid number of chromosomes is represented by **2n**.

organism **1**



organism **2**

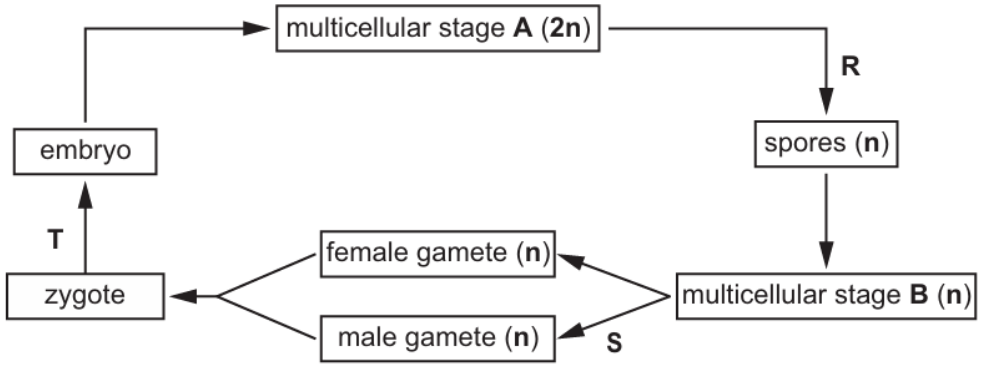


Fig. 3.1

(b) State the events in the life cycle diagram for organism **1** in Fig. 3.1 that would **not** be present in a life cycle diagram for **asexual** reproduction.

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..... [2]

5 **(b)** Mammals use sexual reproduction to produce offspring.

Discuss the advantages of sexual reproduction in organisms such as the koala. **(extended only)**

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..... [3]

6 **(b)** Explain why self-pollination that results in production of offspring is a form of sexual reproduction and **not** asexual reproduction.

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..... [3]

7 **(c)** Discuss the advantages of sexual reproduction to a wild population of flowering plants such as Johnson grass. **(extended only)**

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..... [5]