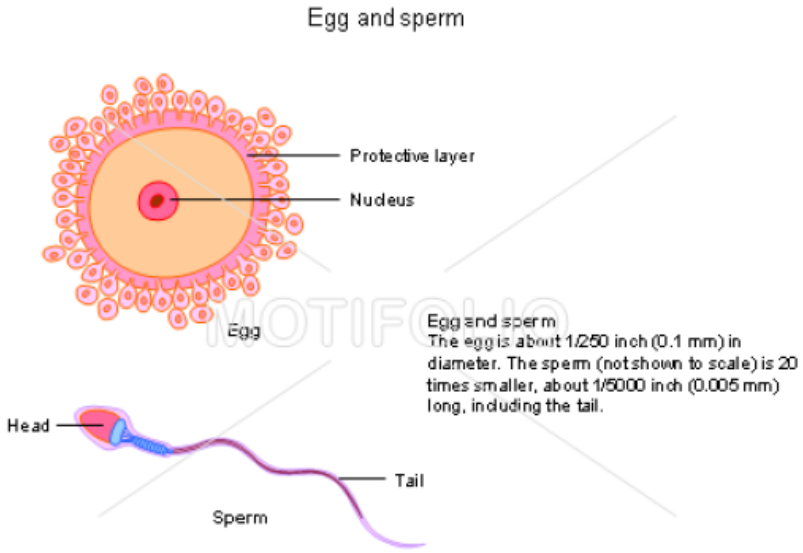
**Unit 2 Key Area 3 Reproduction**

Normal (body) cells are DIPLOID but **gametes** (sex cells) are **HAPLOID**.

(Diploid cells have 2 sets of chromosomes, Haploid cells have 1 set of chromosomes).

Sex cells in animals are known as sperm (male) and eggs (female).

Sex cells in plants are known as pollen (male) and ovules (female).



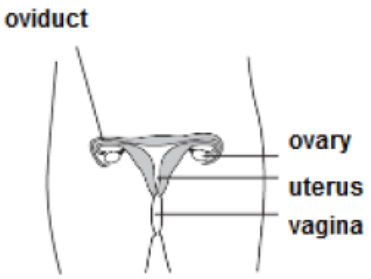

The egg is much bigger than sperm and also contains a yolk sac (food store).

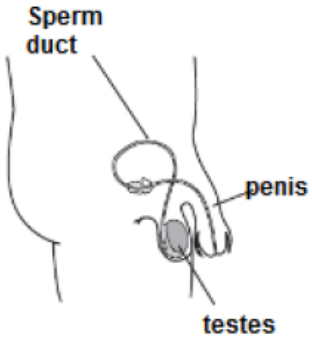
The sperm is much smaller and has a tail to allow it to swim towards the egg.

## Animals

**Sperm** are produced in the **testes**.

**Eggs** are produced in the **ovaries**.



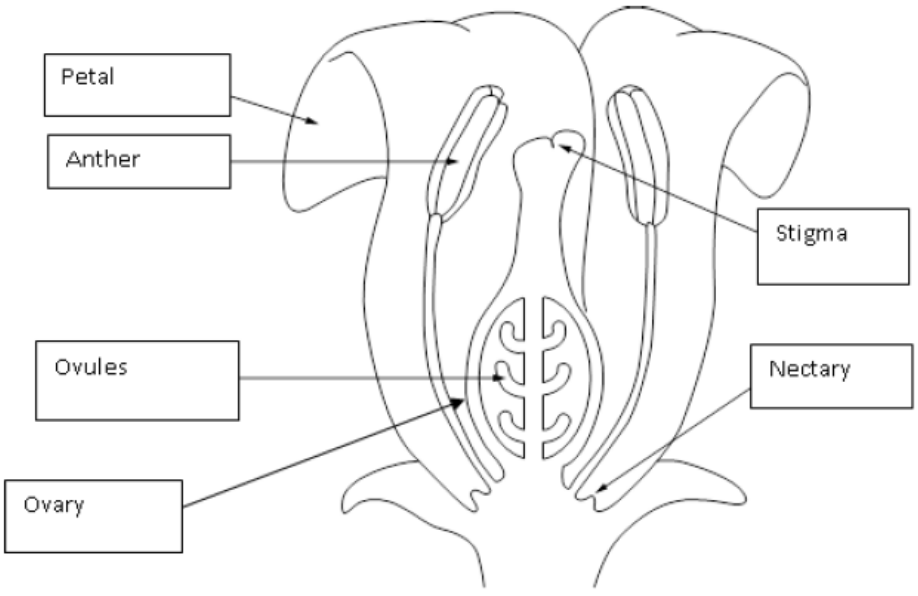

| Structure | Function |
|---|---|
| Oviduct | Site of fertilisation |
| Ovary | Produces female gamete (egg cell) |
| Uterus | Where embryo develops |
| vagina | Where sperm is deposited |

| Structure | Function |
|---|---|
| Sperm duct | Carries sperm from testes to penis |
| Testes | Produces male gametes (sperm cell) |
| penis | Deposits sperm |

## Plants

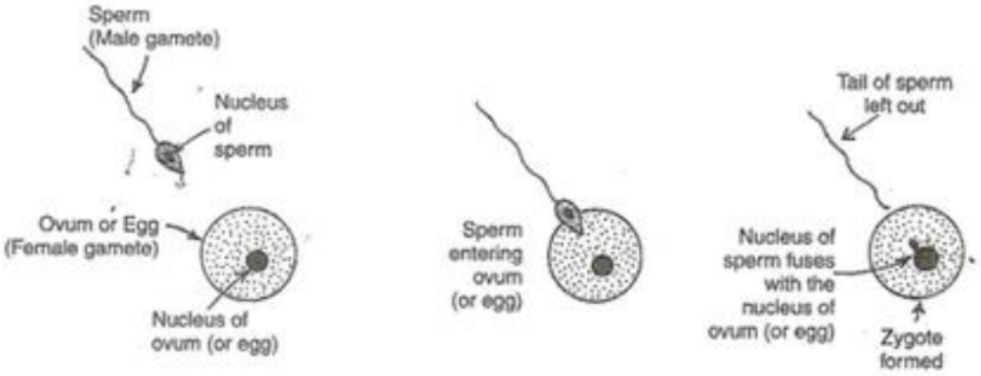
**Pollen** grains are produced in the **anthers**.

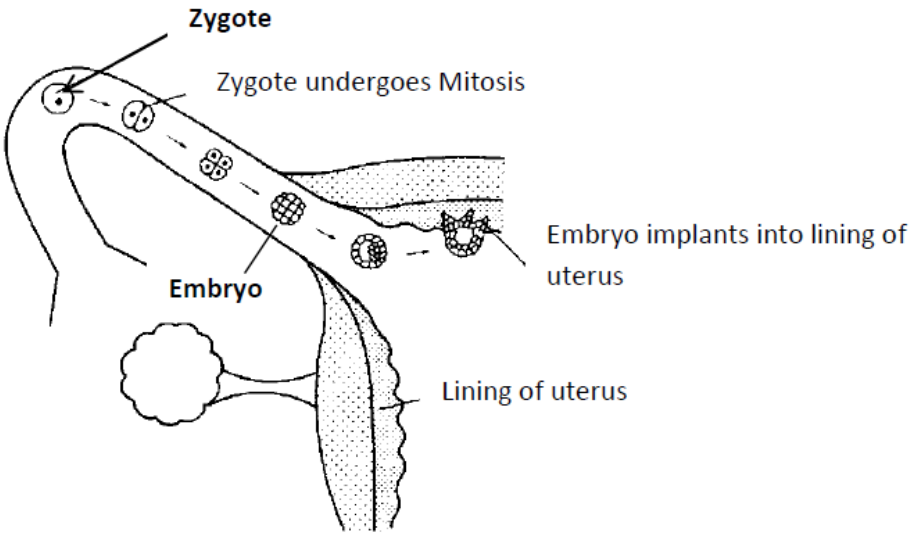
**Ovules** are produced in the **ovary**.



## Fertilisation

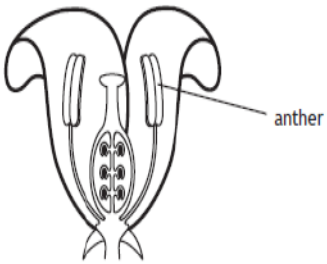
Fertilisation is the **fusion of the nuclei of the 2 haploid gametes** to produce a **diploid zygote**, which divides to form an **embryo**.



## Example questions:

1. The diagram shows the main parts of a flower.



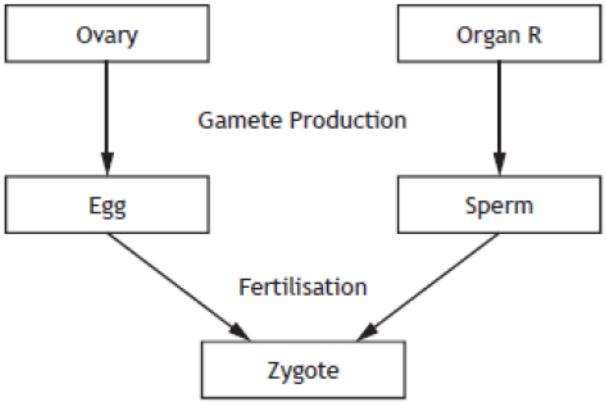

Which row in the table describes the type of gametes produced by the anther and the chromosome complement these gametes contain?

| | *Type of gamete produced* | *Chromosome complement* |
|---|---|---|
| A | female | diploid |
| B | male | diploid |
| C | female | haploid |
| D | male | haploid |

In this question, the anther produces the **male** gamete and this is **haploid**.

Answer = D

2. The diagram relates to sexual reproduction in humans.




(i) Name organ R. 1

Organ R produces sperm so it must be the **Testes**

(ii) Describe what happens during fertilisation. 1

The nucleus of the sperm fuses with the nucleus of the egg to form a zygote.

(iii) An egg cell is haploid but a zygote is diploid.

Explain what this means in terms of the chromosome complement found in each of these cells. 1

The haploid egg has 1 set of chromosome, whereas the diploid zygote has 2 sets of chromosomes.

Must refer to both egg & zygote!