Practice Exam Questions

1. Where would you find the chromosomes? _____

2. Complete the following sentences.

   The egg cell and the sperm cell combine in a process known as _____.

   The egg cell is made in the _____.

   The sperm cell is made in the _____.

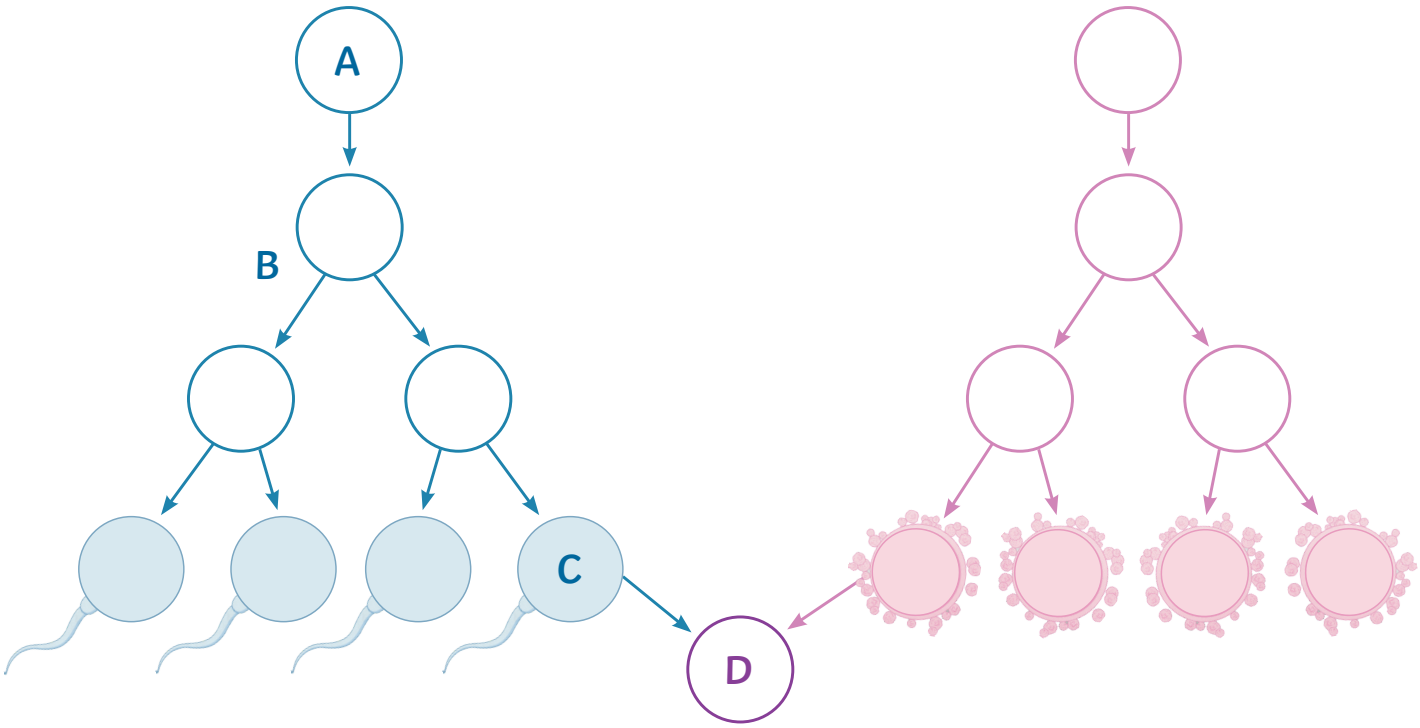
3. How many chromosomes would you find in...

   a human body cell? _____

   a sperm cell? _____

   the cell of an embryo? _____

4. The diagram below represents the production of gametes and fertilisation in a snake. Snakes and humans have a different number of chromosomes.



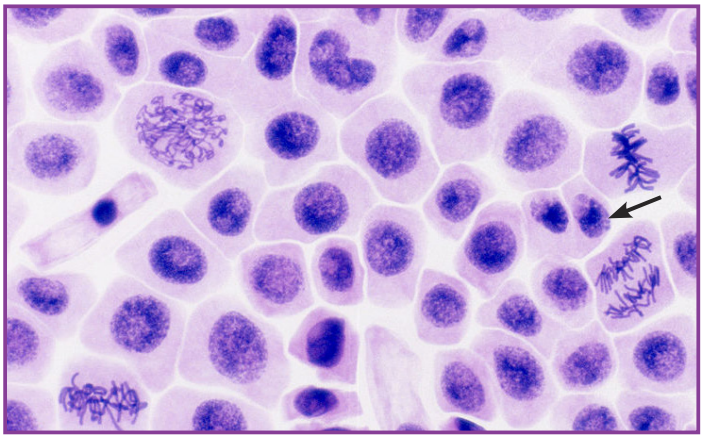
Cell A contains 36 chromosomes. How many chromosomes would be in...

cell B? _____	cell C? _____	cell D? _____

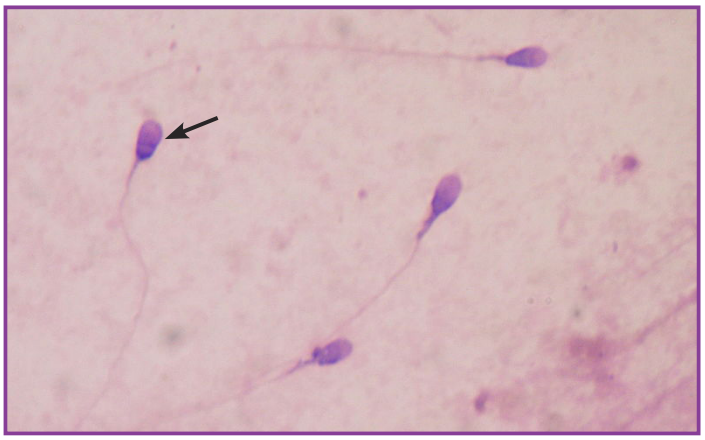
5. Why is it important that gametes have half the number of chromosomes?

6. The arrows on the pictures below show cells that have just been formed. Which sort of cell division happened to form each cell?

onion root tip cells



sperm cells



7. Jackie enjoyed a particularly sweet orange. She planted the seeds from the orange and in a few years the tree started to produce fruit. The oranges did not taste as sweet as Jackie's original orange. Explain why.

8. Compare mitosis and meiosis.

Practice Exam Questions Answers

1. Where would you find the chromosomes? **In the nucleus of a cell.**

2. Complete the following sentences.

   The egg cell and the sperm cell combine in a process known as **fertilisation.**
   The egg cell is made in the **ovary.**
   The sperm cell is made in the **testes.**

3. How many chromosomes would you find in...

   a human body cell? **46**
   a sperm cell? **23**
   the cell of an embryo? **46**

4. Cell A contains 36 chromosomes. How many chromosomes would be in...

cell B? **36**	cell C? **18**	cell D? **36**

5. Why is it important that gametes have half the number of chromosomes?

Because they will join the other gamete to restore the normal number of chromosomes.

6. The arrows on the pictures below show cells that have just been formed. Which sort of cell division happened to form each cell?

onion root tip cells	sperm cells
mitosis	**meiosis**

7. Jackie enjoyed a particularly sweet orange. She planted the seeds from the orange and in a few years the tree started to produce fruit. The oranges did not taste as sweet as Jackie's original orange. Explain why.

Seeds are produced by sexual reproduction and therefore there is mixing of genetic information which will cause variation in the offspring.

8. Compare mitosis and meiosis.

Meiosis occurs in the ovary or testes and produces gametes for sexual reproduction. Mitosis occurs in all other cells. It is asexual reproduction that is used for growth and replacement of cells. Meiosis forms four daughter cells, in two divisions, and each has 23 chromosomes. Mitosis forms two daughter cells, in one division, and each has 46 chromosomes. Genetic information is not mixed in mitosis, so daughter cells are identical. In meiosis there is mixing of the genetic information that causes variation in the daughter cells.