SmartKalike

CBSE Class 10 · Science

How do Organisms Reproduce?

10 most probable questions for Boards 2027

Q1. 1 mark · Multiple choice

Which statement describes asexual reproduction?
(A) A new generation is formed from a single individual.
(B) Two gametes fuse to form a zygote.
(C) Pollen is transferred between flowers.
(D) Two parents contribute genetic material to the offspring.

Answer

(A) A new generation is formed from a single individual — All the modes of reproduction that we have discussed so far allow new generations to be created from a single individual.

Q2. 2 marks · Short answer

In Rhizopus, what do sporangia contain, and how do the spores' thick walls help them develop into new individuals?

Answer

The blobs are sporangia, which contain cells, or spores, that can eventually develop into new Rhizopus individuals. The spores are covered by thick walls that protect them until they come into contact with another moist surface and can begin to grow.

Q3. 3 marks · Medium answer

Explain how sexual reproduction combines variations from two individuals to create new combinations. Also state how DNA-copying errors contribute to variation and how this can help a species survive.

Answer

1. DNA-copying mechanisms are not absolutely accurate; resultant errors create variations in populations.
2. Each new variation arises in a DNA copy already carrying variations from previous generations, so individuals accumulate different patterns.
3. Sexual reproduction combines DNA from two different individuals, creating novel combinations of variants; variations in a population help ensure the survival of the species.

Q4. 5 marks · Long answer

Explain pollination, distinguishing self-pollination from cross-pollination and naming agents that can transfer pollen. Then describe how the pollen reaches the ovary and the changes that follow fertilisation to form an embryo, seed and fruit.

Answer

Flowers have stamens and pistil as reproductive parts.

1. Pollination is the transfer of pollen from the stamen to the stigma. Self-pollination occurs within the same flower, while cross-pollination transfers pollen from one flower to another. Wind, water and animals are agents of pollen transfer.
2. After pollen lands on a suitable stigma, a tube grows out of the pollen grain and travels through the style to the ovary.
3. The male germ-cell produced by the pollen grain fuses with the female gamete in an ovule. Fertilisation forms a zygote, which divides several times to form an embryo within the ovule.
4. The ovule develops a tough coat and becomes a seed, while the ovary ripens into a fruit. Petals, sepals, stamens, style and stigma may shrivel and fall off.
The seed contains the embryo, which develops into a seedling under appropriate conditions.

Q5. 1 mark · Very short answer

Why can DNA copying not be made much less accurate to speed up the generation of variation?

Answer

If the DNA copying mechanisms were to be less accurate, many of the resultant DNA copies would not be able to work with the cellular apparatus, and would die.

Q6. 2 marks · Short answer

How does meiosis help prevent the DNA content from doubling in every generation, and what happens to chromosome number when two germ-cells fuse?

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Q7. 3 marks · Medium answer

Why are the testes located in the scrotum outside the abdominal cavity? State where eggs are produced and how an egg released after puberty travels towards the uterus.

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Q8. 5 marks · Long answer

Describe the role of the placenta in exchange between the mother and embryo. Explain what happens to the uterine lining if the egg is not fertilised, and define puberty.

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Q9. 1 mark · Multiple choice

Which statement correctly describes the reproductive parts of a flower?
(A) The stamen produces pollen grains, and the pistil consists of the ovary, style and stigma.
(B) The pistil produces pollen grains, and the stamen consists of the ovary, style and stigma.
(C) The sepal produces pollen grains, and the petal contains ovules.

(D) The petal produces pollen grains, and the sepal contains the egg cell.

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Q10. 2 marks · Short answer

In a flowering plant, which male and female germ-cells fuse during fertilisation, and where does this fusion occur?

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