NCERT Solutions for Class 10 Science Chapter 7 – How do Organisms Reproduce?

Intext Questions with Solutions of Class 10 Science Chapter 7 – How do Organisms Reproduce?

1.

What is the importance of DNA copying in reproduction?

Ans: The significance of DNA copying in reproduction is as follows:

- It preserves the traits of the species.
- It preserves life's continuance.
- As a result, the traits and attributes of the organisms are transferred to their offspring.
- It causes organisms to vary, which is the foundation for the emergence of new species.

2.

Why is variation beneficial to the species but not necessarily for the individual?

Ans: As the environment changes significantly and the species' survival becomes more challenging, variations can occasionally be advantageous to the species. For instance, the majority of the microorganisms in the water would perish if the temperature were abruptly raised. There would be very few that could live, and those few are heat-resistant. But without these variations, the entire bacterial population would be exterminated. Variants therefore aid in the species' survival. However, not every variation is advantageous for a single creature.

3.

How does binary fission differ from multiple fission?

Ans: Binary fission: It is when one cell splits into two equal parts. Amoebas and bacteria are two instances of binary fission.
Multiple fission: It is when one cell splits into several daughter cells at the same time. Algae and sporozoans are two instances of multiple fission.

4.

How will an organism be benefited if it reproduces through spores?

Ans: Because spores are protected from harsh environments by a thick covering, an organism benefits from reproducing through them. Once favorable conditions are met, these spores begin to multiply once more. They are able to survive in unfavorable circumstances in this way.

5.

Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration?

Ans: Because their organ systems are organized at separate levels, organisms with higher levels of complexity are unable to regenerate into new individuals. Each of these organ systems is linked to the others and functions in perfect harmony. They are unable to create new individuals, but they are able to repair some of their lost body parts, such as muscles, skin, and blood.

6.

Why is vegetative propagation practised for growing some types of plants?

Ans: Vegetative propagation is the process of sexual reproduction carried out by the plant's vegetative parts (leaf, stem, and roots). This type of self-sustaining multiplication takes place without the need for seeds. It has numerous benefits, including:

1. The spread of plants, such as bananas and orchids, that do not produce viable seeds.
2. The propagation of a particular superior kind of plant, as the offspring will be genetically identical to the parent plant.
3. A faster propagation technique that yields many seedlings in a shorter amount of time.
4. Plant introduction and proliferation in more recent locations where seeds may not sprout because of adverse soil or environmental circumstances.

7.

Why is DNA copying an essential part of the process of reproduction?

Ans: DNA copying is a crucial aspect of the reproduction process because it allows the features of the parent organism to be passed down to its offspring while also producing some occasional deviations in the progeny. The modifications in a DNA copy allow an organism to survive in changing settings.

8.

How is the process of pollination different from fertilisation?

Ans:

Pollination	Fertilisation
1. Pollination is the process by which pollen grains go from a stamen's anther to a carpel's stigma.	1. When the female gamete (or egg) in the ovule combines with the male gamete in the pollen grain, fertilization takes place.
2. A variety of pollination agents are responsible for it.	2. It can occur naturally or artificially.

9.

What is the role of the seminal vesicles and the prostate gland?

Ans: With the aid of secretions from the prostate gland and seminal vesicles, sperm are lubricated and given a fluid medium for convenient transit. Additionally, these secretions supply nutrients in the form of calcium, fructose, and certain enzymes.

10.

What are the changes seen in girls at the time of puberty?

Ans:

- The skin of the nipples at the points of the breasts darkens as the breasts get bigger.
- The Appearance of hair in the genital area.
- Hair on other parts of the body, such as the face, hands, legs, and underarms.
- Both the ovary and uterus grow in size.
- The menstrual cycle's start.
- Pimples form as a result of increased oil production from the skin.
- An increase in hip width.

11.

How does the embryo get nourishment inside the mother's body?

Ans: The embryo receives nourishment from the mother's blood inside her body. The placenta is a unique structure that is used for this. The placenta has villi. The tissues covering the villi in the mother have empty gaps. It offers a lot of surface area for the transmission of chemicals from the mother to the embryo, including oxygen and glucose.

12.

If a woman is using a copper -T, will it help in protecting her from sexually transmitted diseases?

Ans: No, the use of copper-T cannot prevent the interaction of bodily fluids. Therefore, it is unable to shield her from acquiring sexually transmitted diseases.

Exercise Questions with Solutions of Class 10 Science Chapter 7 – How do Organisms Reproduce?

1.

Asexual reproduction takes place through budding in
(a) Amoeba. (b) Yeast.
(c) Plasmodium. (d) Leishmania.

Ans: (b) Yeast

2.

Which of the following is not a part of the female reproductive system in human beings?
(a) Ovary (b) Uterus
(c) Vas deferens (d) Fallopian tube

Ans: (c) Vas deferens

3.

The anther contains
(a) sepals. (b) ovules. (c) pistil. (d) pollen grains.

Ans: (d) Pollen grains

4.

What are the advantages of sexual reproduction over asexual reproduction?

Ans: The benefits of sexual reproduction are as follows:

1. The child possesses the traits of both parents.
2. Because there are more variants, the species is guaranteed to survive.
3. The progeny may readily adjust to changes in their surroundings.
4. Additionally, it enhances human wellness.

5.

What are the functions performed by the testis in human beings?

Ans: Human testes serve the following purposes:

i. Male gametes, or sperm, are produced by the testes of human males following the adolescent stage.
ii. The testes produce a hormone known as testosterone. The development of secondary sexual characteristics and reproductive organs is regulated by testosterone.

6.

Why does menstruation occur?

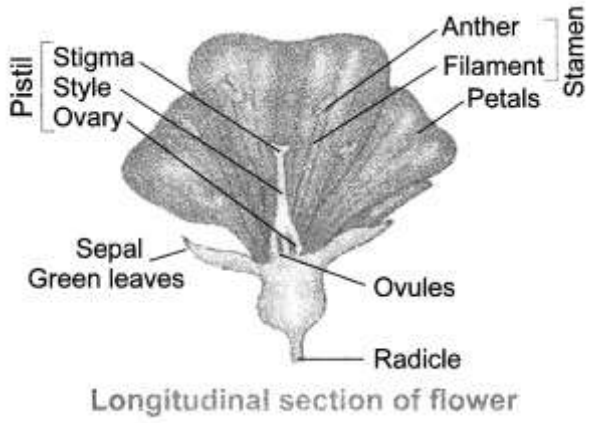
Ans: Menstruation is defined as the regular bleeding of the vaginal lining that begins at the onset of puberty and continues until menopause. The body readies itself for pregnancy throughout this time frame.

Once a month, while the uterus is getting itself ready for the fertilized egg, one of the ovaries releases an egg at the same time. For the purpose of providing the embryo with enough blood and thickening the inner lining of the uterus, a sufficient amount of blood is delivered to the uterus. The egg cannot be fertilized since there is no interaction between it and the sperm. Therefore, when the egg is not fertilized, the lining of the uterus gradually breaks down, resulting in menstruation.

7.

Draw a labelled diagram of the longitudinal section of a flower.

Ans:



Longitudinal section of flower

8.

What are the different methods of contraception?

Ans: The various methods of contraception are as follows:

i. **Barrier method:** This method employs the use of condoms, diaphragms, and cervical caps. These inhibit the passage of sperm into the female genital tract during sexual intercourse.
ii. **Chemical method:** This method involves the use of two types of pills, specifically oral and vaginal pills, by a woman. Oral contraceptive pills are hormonal formulations that inhibit ovum release in the fallopian tubes. These are referred to as oral contraceptives. The vaginal formulations, including pills and creams, possess spermicidal properties. The chemicals in these spermicides eliminate sperm during their passage through the vaginal tract.
iii. **Intrauterine contraceptive devices:** such as the copper-T, are safely inserted into the uterus by a qualified medical professional. It inhibits sperm from reaching the uterus.
iv. **Surgical method:** This method involves the surgical cutting or tying of a small segment of the male vas deferens and the female fallopian tube. In males, the procedure is referred to as vasectomy, while in females, it is known as tubectomy.

9.

How are the modes for reproduction different in unicellular and multicellular organisms?

Ans: Fission, budding, and other processes are among the various ways that unicellular creatures reproduce. The cell divides into two daughter cells at this point, and the cell division process keeps on.

Multicellular creatures, on the other hand, have a distinct organ system for reproduction. Multicellular organisms can reproduce in a variety of ways, including spore formation and vegetative propagation.

Sexual reproduction is the method used for reproduction in more complex creatures, such as humans and animals.

10.

How does reproduction help in providing stability to populations of species?

Ans: Living things procreate in order to maintain a certain species. By creating a new person that looks like the parents, the species' population is given stability. Therefore, reproduction gives populations of species stability. Furthermore, because of the existence of variations, the species is ultimately better able to adapt to changes in its environment.

11.

What could be the reasons for adopting contraceptive methods?

Ans: The following factors contribute to the adoption of contraceptive methods:

i. In order to avoid unintended pregnancies.
ii. To control the birth rate, population growth, or both.
iii. To stop sexually transmitted infections from spreading.