

## Chapter – 8 How Do Organisms Reproduce

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#### Q1. What is the importance of DNA copying in reproduction?

**Answer:**

- i) The chromosomes in the nucleus of a cell contain information for the inheritance of features of parents in the form of DNA copying so characteristics of the parent organism are transferred to offspring.
- ii) When the DNA present in the nucleus of a parent cell is copied by biochemical reactions, then variations come in the two copies formed which lead to slight variations in the offspring which form the basis for evolution.

#### Q2. Why is variation beneficial to the species but not necessarily for the individual?

**Answer:**

Variation is useful for the survival of a species even in adverse environment conditions.

1. There may be some drastic changes like excessive heat or cold or shortage of water etc, in the habitat of a species of organism, if all the organisms of a population living in a habitat are identical, then all of them may die.
2. This eliminate the species from that habitat completely, if some variations are present in organisms to tolerate heat or cold or survive on limited water supply, there is a chance to survive and flourish in adverse environment.
3. For example, a population of certain bacteria living in temperate water and the temperature of water increases due to global warming, then these bacteria will not tolerate heat and will die. But some bacteria which had variations to resist heat survive and grow.

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#### Q1. How does binary fission differ from multiple fission?

**Answer:**

In binary fission, the parent organism splits into two new organisms. In multiple fission, the parent organisms split into many new organisms. Amoeba reproduces by binary fission and malarial parasite Plasmodium reproduces by multiple fission.

**Q2. How will an organism be benefited if it reproduces through spores?**

**Answer:**

The reproduction by spores takes place in plants, which have a hard protective coat to survive under lack of food, lack of water and extreme temperatures, but when the conditions are favourable, the spores grow into new plants.

**Q3. Can you think of more reasons why more complex cannot give rise to new individuals through regeneration?**

**Answer:**

In multicellular organisms, cells make up tissues; tissues make up organs; organs make up organ systems; and organ systems make up organisms. So, a complex multicellular organism cannot reproduce from their cut body parts by the process of regeneration.

Example, a dog is a multicellular organism which cannot regenerate from its cut body part, like a cut tail, as the cells present in the cut tail of a dog cannot produce a dog's heart, brain, lungs, stomach, intestines and limbs etc. Multicellular organisms need sexual reproduction.

**Q4. Why is vegetative propagation practised for growing some types of plants?**

**Answer:**

Vegetative propagation is used for growing plants because of the following advantages:

- i) All the plants produced by vegetative propagation have all characteristics of the parent plant.
- ii) The fruit trees grown from seeds take many years to bear fruit. But by vegetative propagation methods like cuttings or grafting start to bear fruits earlier.
- iii) The plants grown by vegetative propagation need less attention in early years than those grown from seeds.
- iv) Many plants are grown from one parent plant by artificial propagation.
- v) Vegetative propagation propagates plants like banana, rose, jasmine and orange that do not produce seeds.

**Q5. Why is DNA copying an essential part of the process of reproduction?**

**Answer:**

DNA help in the inheritance of characteristics from the parents to the next generation. DNA copying is the process of reproduction as it helps in the transmission of characteristics of the parents to offspring in the next generation.

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#### **Q1. How is the process of pollination different from fertilisation?**

**Answer:**

Pollination is the transfer of pollen grains from the anther of stamen to the stigma of a carpel in the same flower or another flower of the same species. Fertilisation occurs when male gamete in the pollen grain joins the female gamete in ovule to form a zygote.

#### **Q2. What is the role of seminal vesicles and prostate gland?**

**Answer:**

Seminal vesicles and prostate gland are in male reproductive system. The seminal vesicles and prostate gland take secretions to the vas deferens which carries sperms. The secretions of seminal vesicles and prostate gland provide nutrition to the sperms and help them to transport.

#### **Q3. What are the changes seen in girls at the time of puberty?**

**Answer:**

The various changes in girls at puberty are:

1. Hair grows under armpits and pubic region.
2. Mammary glands or breasts enlarge.
3. Hips broaden.
4. fat is deposited in hips and thighs.
5. Fallopian tubes, uterus and vagina enlarge.
6. Ovaries release eggs.
7. Menstruation or monthly periods starts.
8. Feelings and sexual drives begin to develop.

#### **Q4. How does the embryo get nourishment inside the mother's body?**

**Answer:**

The embryo gets nutrition from the mother's blood with the help of placenta which is a disc-shaped tissue in the uterus wall. It has villi on the embryo. On mother's side

are blood spaces which surround the villi. Placenta provides a large surface area for glucose and oxygen to pass from the mother to the embryo. The developing embryo produces waste and is removed by transferring into mother's blood through the placenta.

**Q5. If a woman is using a copper-T, will it help in protecting her from sexually transmitted disease?**

**Answer:**

No, the use of copper-T for contraception will not protect a woman from sexually transmitted disease.

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**Q1. Asexual reproduction takes place through budding in:**

- a) Amoeba
- b) Yeast
- c) Plasmodium
- d) Leishmania

**Answer:** Option b)

Asexual reproduction occurs by budding. In this, the offspring grows inheriting the parent gene. In asexual reproduction, an offspring is reproduced from a single parent. So, the correct answer is yeast.

**Q2. 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

**Answer:** Option c)

The female reproductive system have – fallopian tubes, a pair of ovaries, uterus, vagina.

**Q3. The anther contains:**

- a) Sepal
- b) Ovules

- c) Carpel
- d) Pollen grains

**Answer:** Option d)

Male reproductive organs of a flower have 2 parts: anther and filament. Anther produces pollen grains

**Q4. What are the advantages of sexual reproduction over asexual reproduction?**

**Answer:**

- i) Sexual reproduction combines DNA from male and female due to which the offspring has variations. In asexual reproductions, DNA of one individual is copied due to which the variations in the offspring are less.
- ii) Due to variations sexual reproduction change species to more advanced forms from one generation to other and so there is evolution. Asexual reproduction does not change species and hence evolution is very slow.

**Q5. What are the functions performed by testes in human beings?**

**Answer:**

The function of testes is to make sperms and sex hormone called testosterone. The testosterone which brings changes in the boys at the time of puberty like deeper voice, beard, moustache and body hair.

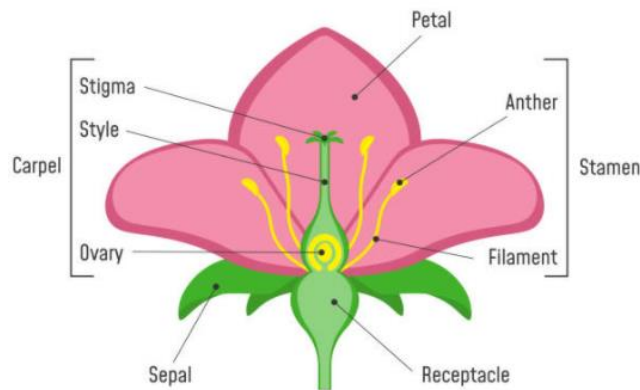
**Q6. Why does menstruation occur?**

**Answer:**

Ovary of the women releases one egg every month, and uterus also prepares to receive a fertilised egg. So, inner lining of the uterus becomes thick and soft with blood capillaries in it. This is because in case the egg is fertilised by a sperm, then the uterus has to nourish it to develop it into a baby. If egg released by the ovary is not fertilised then the thick lining of the uterus is not needed and the uterus lining breaks and comes out through the vagina in the form of blood and mucous, called menstruation.

**Q7. Draw a labelled diagram of the longitudinal section of a flower.**

**Answer:**



**Diagram showing longitudinal section of a flower**

**Q8. What are the different methods of contraception?**

**Answer:**

The various methods of contraception are:

1. Barrier methods: the physical devices like condoms and diaphragm are used. condoms are used by males, as a covering on the penis and diaphragm is used by females in the vagina to cover cervix. Both condom and diaphragm prevent the sperms from meeting the ovum by acting as a barrier.
2. Chemical methods: the females use oral pills which contain hormones to stop the ovaries from releasing ovum into the oviduct.
3. The copper-T: it is placed inside the uterus by a doctor since it prevents the implantation of fertilised egg in the uterus. They are also called as Intra-uterine contraceptive devices (IUCD).
4. Surgical methods: a small portion of the sperm duct is removed by surgical operation and both the cut ends are ligated properly called as vasectomy. In females, a small portion of the oviducts is removed and the cut ends are ligated, which prevents the ovum from entering into the oviduct called as tubectomy.

**Q9. How are the modes of reproduction different in unicellular and multicellular organisms?**

**Answer:**

- i) Unicellular organisms like protozoa and bacteria reproduce by the asexual process of 'fission', in this cell division create new individuals.
- ii) In multicellular organisms, reproduction occurs by asexual methods like budding, spore formation, fragmentation organisms, reproduction, etc., but in complex multicellular organisms, reproduction takes place by sexual methods with gametes from two parents – a male and a female.

**Q10. How does reproduction help in providing stability to populations of species?**

**Answer:**

The process of reproduction show variations in the individual organism of a species for them to survive even in excessive heat, cold or shortage of water etc. Thus, provides stability to the populations of various species during adverse environmental conditions.

**Q11. What could be the reason for adopting contraceptive methods?**

**Answer:**

- i) The use of contraceptive methods helps in family planning and can avoid unwanted pregnancy and can also space the birth of children by using contraceptive methods.
- ii) Some of the contraceptive methods like condom protect a person from sexually transmitted disease.