

## Chapter 8 How Do Organisms Reproduce [STUDY MATERIAL FOR 10<sup>th</sup> class SLOW LEARNERS]

### One mark question

Q1. Name the type of fission carried out by amoeba.

Ans. Binary fission.

Q2. What is vegetative propagation?

Ans. When new plants are grown by using vegetative parts like root, stem and leaves it is known as vegetative propagation.

Q3. Name an organism which reproduces by multiple fission.

Ans. Plasmodium {malarial parasite}

Q4. What is Puberty?

Ans. The age at which the human males and females becomes sexually mature is called puberty.

Q5. What is pollination?

Ans. The transfer of pollen grains from anther to the stigma of the same or another flower of the same kind is called pollination.

Q6. What is fertilization?

Ans. The fusion of male and female gametes is called fertilization.

Q7. What is placenta?

Ans. The tissue connecting developing embryo {foetus} and mother is called placenta.

Q8. What is asexual reproduction?

Ans. The process of reproduction in which only one parent is involved and no sex cells are involved is called asexual reproduction.

Q9. Write the expanded form of AIDS.

Ans. Acquired Immuno deficiency Syndrome is the full form of AIDS.

Q10. Name two sexually transmitted diseases.

Ans. 1. AIDS

2. Gonorrhoea

3. Syphilis

### Two mark question

Q1. Name those parts of the flower which serve the same function as the following do in the animals:

1. Testes
2. Ovary
3. Eggs
4. Sperms

Ans. 1. Stamen

2. Carpel

3. Ovule

4. Pollen grain

Q2. What methods will you use for growing jasmine and rose plant?

Ans. Layering method of artificial vegetative propagation can be used for growing jasmine plant. Stem cutting method can be used for growing rose plant.

Q3. Mention any two functions of human ovary.

Ans. 1. It produces ovum the female gamete.

2. It secretes hormone estrogen.

Q4. Define menstruation.

Ans. The breakdown and removal of the inner thick and soft lining of the uterus along with its blood vessels in the form of vaginal bleeding is called menstruation.

Q5. How the surgery methods are misused by people to prevent pregnancy?

Ans. Surgery methods are misused to prevent pregnancy. This method can be used for removal of unwanted pregnancies by people who do not want a particular child which happens in case of illegal sex selective abortion of female foetus.

Q6. What is the significance of human testes being located in the scrotum?

Ans. Scrotum protects the testes by regulating the temperature of the testes. Sperms need a temperature less than the body temperature for their production and development.

Q7. Questions: Name those parts of a flower which serve the same function as the following do in the animal  
(i) Testis (ii) Ovary (iii) Eggs (iv) Sperms

Ans:

Testis as anther

Ovary ovules present inside ovary

Eggs as eggs

Sperms as pollen grains

Q.8 Pre - natal sex determination has been prohibited by law. State two reasons.

Ans: Prenatal sex determination has been prohibited by law because of indiscriminate female foeticide. As a result of this, child sex ratio is declining at an alarming rate in some sections of our society. For a healthy society, the female-male sex ratio must be maintained.

Q.9. What is placenta ? State its any two roles during pregnancy.

Ans: The placenta is an organ that connects the developing fetus to the uterine wall to allow nutrient uptake, waste elimination, and gas exchange via the mother's blood supply. "True" placentas are a defining characteristic of eutherian or "placental" mammals, but are also found in some snakes and lizards with varying levels of development up to mammalian levels. the following are the roles :-

- (a) For nine months the placenta feeds and nourishes the fetus while also disposing of toxic waste.
- (b) Without it the baby could not survive. After your baby is born, the placenta no longer serves a function.

Q10. Small piece of root tissue was taken from the rose plant and placed in a nutrient medium. Each root tissue produced a new rose plant. Name the reproductive process involved. What type of genes will be possessed by new rose plant ?

Sol. (i) This process is called tissue culture.

(ii) Genes possessed by the new plant is same as that of the parent plant.

Three marks question

Q1. (a). What is fertilization? Distinguish between external fertilization and internal fertilization.

(b). What is the site of fertilization in human beings?

Ans.(a) Fertilization is defined as the fusion of male and female gametes to form a zygote during a sexual reproduction.

Difference between external and Internal fertilization

External fertilization	Internal fertilization
1. The fusion of male and female gametes occurs outside the body.	1. The fusion of gametes occurs inside the body.
2. Both individual discharge their gametes outside the body and development occurs outside the body.	2. The gametes fuse inside the female body and development occurs inside the body.
Example: Frogs	Example: Birds, cattle, humans

(b) The site of fertilization in human beings is in the fallopian tube of female reproductive system.

**Q2. Give two advantages of vegetative propagation.**

Ans. 1(i). Vegetative propagation is a cheaper, easier and more rapid method of propagation in plants than growing plants from seeds.

(ii). The characteristics of the parent plant are preserved by vegetative propagation.

**Q3. Describe the surgical methods of birth control.**

Ans. The surgical method can be done in males as well as in females.

In case of males the vas deference is blocked and sperm transfer is prevented. In case of females the fallopian tube is blocked the egg will not be able to reach the uterus. These are permanent methods of birth control.

**Q4. Why is DNA copying an essential part of the process of reproduction?**

Ans. DNA copying is an essential part of the process of reproduction because-

1. DNA provides cellular apparatus in the daughter cells.
2. DNA in the daughter cells will control their functioning
3. DNA copies will retain the characters.

**Q5. What could be the reasons for the adopting of contraceptive methods?**

Ans. Contraceptive methods are adopted for the following reasons:

1. For preventing unwanted pregnancies and keeping the health of women.
2. To prevent the transmission of fatal diseases mechanical barrier methods are used.

**Q.6. Mention any three advantages of variation in individuals.**

Ans:

- (i) Variation helps in survival of species.
- (ii) It is the basis of evolution.
- (iii) It brings adaptation in individuals.

Q.7. Name the filamentous structure seen in pond. Explain how do they reproduce.

Ans: Spirogyra have filamentous structure. They reproduce by the process of fragmentation in which they break up into smaller pieces upon maturation. These pieces grow into new individuals.

Q.8. A student noticed that an organism by mistake was cut in two parts. After sometime both the parts developed into new individuals.

- (a) Name the mode of reproduction used by the organism.
- (b) State the type of cells which carry this process.
- (c) Write examples of two organisms which multiply by this process.

Ans:

- (a) Regeneration (asexual reproduction)
- (b) Specialised cells.
- (c) Hydra and Planaria

Q9. Ravi took three bread slices and kept the three pieces of the slices in the following conditions.

- (i) Slice 1 in a dried and dark place.
- (ii) Slice 2 in a moist and dark place.
- (iii) Slice 3 in moist and in refrigerator.

What would he observe in each of the above conditions ? Give reasons for your answer ?

Ans:

- (i)** In Slice 1, No spore will develop due to lack of moisture.
- (ii)** A white cottony mass surrounded with a black mass is seen spreading on the surface of slice 2 due to formation of sporangia and spores as moisture and darkness provide favourable condition.
- (iii)** In slice 3, no spore will be formed as it is kept at a lower temperature in the refrigerator, which is not a favourable condition.

Q10. (i) State the function of (a) stigma (b) pollen tube. (ii) What happens to the ovule after fertilization ?

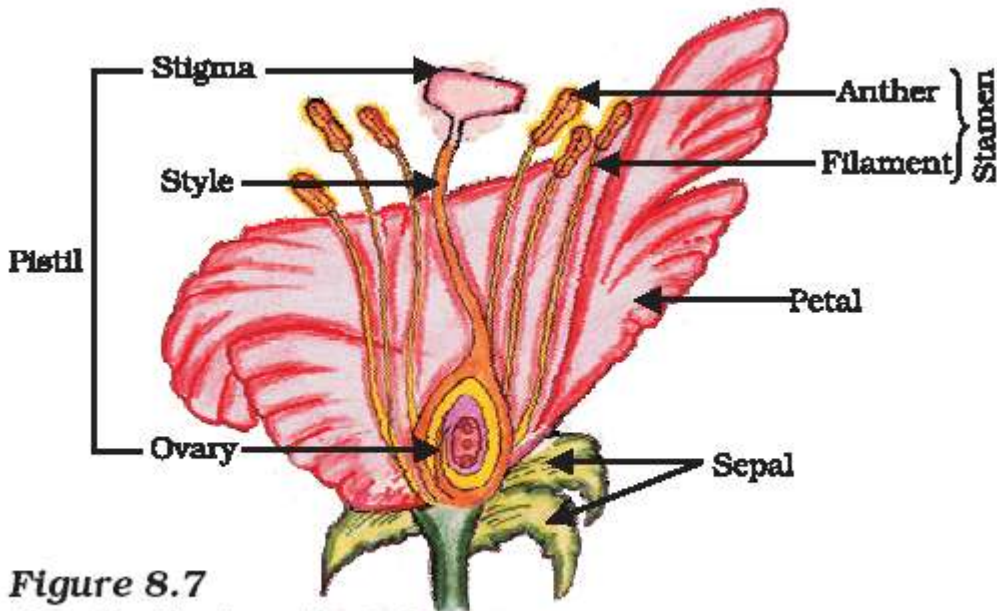
Ans: .

- (i) (a) Stigma receives pollens.
- (b) Pollen tube helps to carry the male germ cell to the female germ cell from the stigma to the ovary.
- (ii) After fertilization, the ovule develops into seed.

Five mark Question

Q1. Explain the structure of flower with the help of a labeled diagram.

Ans.



**Figure 8.7**  
*Longitudinal section of flower*

The flower is made up of four main parts:

1. Sepals
2. Petals
3. Stamen
4. Pistil

Seeds are green leaf like structure. Petals are colorful parts of the flower. Stamens are made up of filament and anther and are called the male part of the flower. Pistil is known as the female part of the flower and consists of stigma, style and ovary.

Q2. Differentiate between asexual and sexual reproduction.

Ans.

Asexual reproduction	Sexual reproduction
1. Only one parent is required.	1. Two organisms, one male and one Female are involved.
2. Gametes are not involved.	2. Gametes are involved
3. Offsprings formed are genetically identical to the parent.	3. Offspring's formed are genetically different from the parent.
4. Multiplication occurs faster.	4. multiplication is slower
Examples are amoeba, hydra.	Examples are fishes, mammals and reptiles.

Q3. What is the significance of fertilization? Enumerate the method of fertilization as seen in a flowering plant.

Ans. Significance of fertilization:

1. Fertilization restores the number of chromosomes.
2. It brings variation in the Offsprings.

The methods of fertilization as seen in a flowering plant are as follows:

In plants pollination is followed by fertilization. The pollen grains are deposited on stigma and form tubes called the pollen tubes which grow through the style and reach the ovary. The pollen tube contains male gamete and the ovary contains ovules which contain the egg or female gamete. The male gamete fuses with the female gamete to form the zygote which divides and redivides to form embryo. The ovary develops into fruit and ovules develop into seed.

Q4. Describe the asexual reproduction in amoeba. Describe budding in hydra.

Ans. Asexual reproduction in amoeba by binary fission. Binary fission is division of one cell into two similar cells. In this method the nucleus first divides into two, followed by the division of cytoplasm. The cell finally splits into two daughter cells.

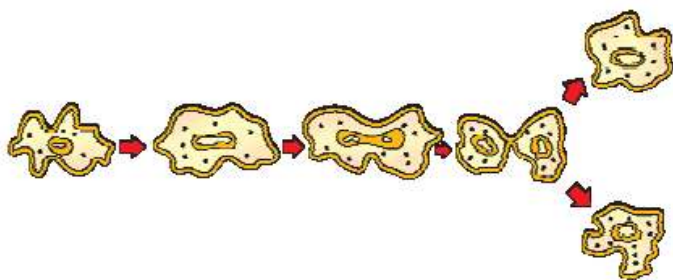


Figure 8.1 Binary fission in Amoeba

Hydra reproduces by budding using the regenerative cells. A bud develops as an outgrowth in hydra due to repeated cell division at one specific site. When fully mature, the bud detaches itself from the parent body and develops into independent individuals.

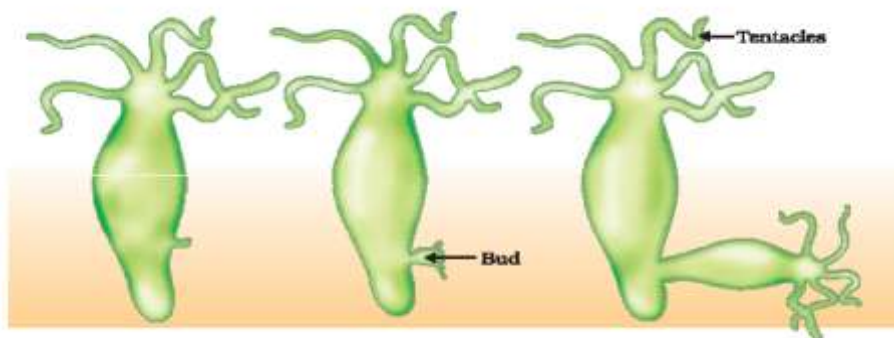
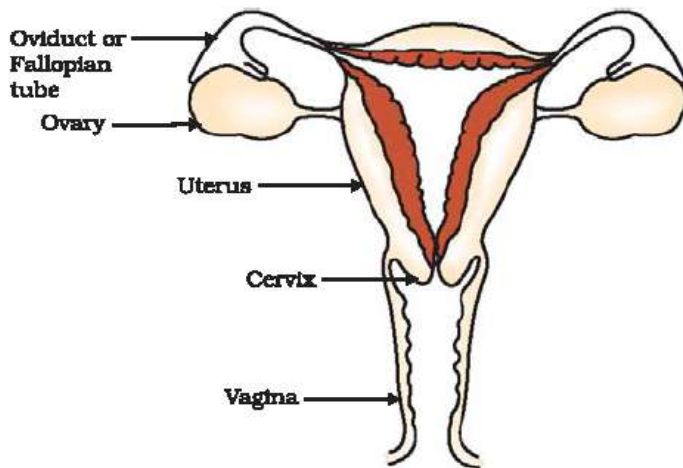


Figure 8.4 Budding in Hydra

Q5. {a} Draw labeled diagram of the female reproductive system in human beings.

{b} How the sexual mode of reproduction leads to better survival of the species.

Ans.(a)



**Figure 8.11** Human-female reproductive system

{b} As we know in cell division, copy of DNA is having some variation from the original one and in sexual reproduction germ cells from two different individuals fuse together and thus create new combination of variants and as the variations are in living individuals, so naturally they are favorable variations and combination of such favorable variation will provide survival of species.

Q6. Write the function of the following with respect to the point given below :

- (a) Urethra in male reproductive system.
- (b) Long tail of sperms.
- (c) Inner linings of uterus is richly supplied with blood.
- (d) Pollen tube develops from the pollen grain which lands on stigma.
- (e) Testes are located outside abdominal cavity in scrotum.

**Ans:**

- (a) Common passage for sperms and urine.
- (b) Helps sperms to move towards the female germ-cell.
- (c) To nourish the growing embryo.
- (d) To reach female germ cells.
- (e) Sperm formation requires a lower temperature.