CBSE Class 10 Science
Important Questions
Chapter 8
How do Organisms Reproduce

1 Marks Questions

1. In vegetative reproduction, the new individuals are genetically –

a) Similar

b) Dissimilar

c) Abnormal

d) None of these

Ans. a) Similar

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2. When an organism breaks into a number of parts and each part develop into an individual, it is called –

a) Budding

b) Binary fission

c) Regeneration

d) Spore formation

Ans. c) Regeneration

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3. In man, fertilization of ovum takes place in

a) Vagina

b) ovary

c) uterus

d) Fallopian tubes

Ans. d) Fallopian tubes

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4. Define parthenogenesis.

Ans. Development of organism from an unfertilized egg.

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5. How may male gametes are produced by pollen grains?

Ans. Two

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6. During grafting, the portion of plant that is grafted is called –

a) Stock

b) Scion

c) stalk

d) stem

Ans. b) Scion

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7. Which part of the flower forms the fruit?

a) Whole flower

b) Only stamens and carpel

c) Only ovary

d) Only carpel

Ans. c) Only ovary

8. Anemophily is the pollination by –

a) Birds

b) Rain

c) insects

d) Wind

Ans. d) Wind

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9. What is syngamy?

Ans. Fusion of male gamete with the egg cell is called syngamy.

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10. Name the structure through which pollen tubes enters the ovule.

Ans. Stigma

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11. A common feature of reproduction in Amoeba, spirogyra and yeast is that –

a) Asexual reproduction occurs after sexual reproduction

b) Asexual reproduction occurs before sexual reproduction

c) Asexual reproduction does not involve gametes

d) Asexual reproduction involves only one parent

Ans. (d) Asexual reproduction involves only one parent.

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12. The normal duration of menstrual cycle is

a) 7 – 8 days

b) 13 – 15 days

c) 3 – 4 days

d) 28 days

Ans. d) 28 days

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13. Which of the following is an IUCD?

a) copper – T

b) diaphragm

c) oral pills

d) tubectomy

Ans. a) copper – T

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14. What is parturition?

Ans. Parturition – The birth of fully developed foetus in completion of gestation.

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15. What is puberty?

Ans. Puberty – Age when reproductive system functionally active or starts producing ova or sperm is called puberty.

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16. Fertilization in plants occurs in the –

a) Embryo sac

b) Style

c) Pollen tube

d) Stigma

Ans. a) Embryo sac

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17. Characters that are transmitted from parents to offspring during reproduction

show

a) only similarities with parents

b) only variations with parents

c) neither similarities nor variations

d) both similarities and variations with parents

Ans. d) both similarities and variations with parents

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18. Which among the following diseases is not sexually transmitted?

a) syphilis

b) Gonorrhoea

c) HIV – AIDS

d) Hepatitis

Ans. d) Hepatitis

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19. What is tubectomy?

Ans. Removal of a section of fallopian tube.

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20. Name the causative organism, of AIDS?

Ans. HIV – *Human Immunodeficiency* virus.

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21. A common feature of reproduction in Amoeba, spirogyra and yeast is that –

a) They reproduce only sexually

b) They are all unicellular

c) they reproduce asexually

d) They are all multicellular

Ans. They reproduce asexually

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22. Which of this is seminal fluid?

a) Prostate gland

b) Cowper's gland

c) Seminal vesicle

d) all of these

Ans. c) Seminal vesicle

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23. At the time of entering into ovule, pollen tube has

a) three male nuclei

b) two mole nuclei

c) one gamete nucleus

d) four male gametes

Ans. Two male nuclei

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24. How many follicles mature every month during the reproductive phase of human female?

Ans. One egg is produced every month by one of the ovaries

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25. What is the product of fertilization?

Ans. Zygote

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26. Asexual reproduction takes place through budding in

(a) Amoeba

(b) Yeast

(c) Plasmodium

(d) Leishmania.

Ans. (b) Yeast

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27. Which of the following is not a part of female reproductive system in human beings?

(a) Ovary

(b) Uterus

(c) Vas deferens

(d) Fallopian tube

Ans. (c) Vas deferens

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28. The anther contains

(a) Sepals

(b) Ovules

(c) Carpel

(d) Pollen grains.

Ans. (d) Pollen grains.

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29. The simple animals such as planaria can be cut into number of pieces and each piece grows into a complex organism. What is this process known as?

Ans. Regeneration

30. Name the unicellular organism which caused the disease known as kala-azar.

Ans. Leishmania

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31. Which process taking place in the nucleus of a cell leads to variation in the offspring during reproduction?

Ans. DNA copying

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32. Which type of layering is done in Jasmine?

Ans. Air Layering (Gootee)

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33. Where does fertilization takes place in human female?

Ans. Oviduct (fallopian tube)

2 Marks Questions

1. Define reproduction. Why is it important?

Ans. It is a process by which organisms are able to produce new organisms of their own kind. It is important to maintain continuity of life.

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2. What is callus?

Ans. In artificial vegetative propagation, an isolated plant part called explants is cultured in glass container under aseptic conditions with proper nutrient medium. The explants develop into undifferentiated mass of cells called callus.

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3. What happens if the mature ovum is not fertilized in a female? Name the process

Ans. If mature egg is not fertilized it gets released into fallopian tubes. This process is known as menstruation.

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4. Give two examples each of IUCD and STD.

Ans. IUCD – Copper–T, loops

STD – Syphilis, gonorrhoea

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5. What do you understand by self-pollination & cross pollination? Give examples of each.

Ans. Self pollination - It is the transfers of pollen grains form an anther to the stigma of the same plant. If it is in the same flower, it is called autogamy and if it is between flowers of the same plant, then it is called geitonogamy.

Cross pollination – It is the transfer of pollen grains from anther to the stigma of different plants of the same species.

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6. What is the difference between binary fission and multiple fission?

Ans.

Binary Fission	Multiple Fission
It is a type of asexual reproduction in which one parent organism divides into two new organisms. For ex – Amoeba	It is a type of asexual reproduction in which one parent organism divides into many new organism for ex – Plasmodium

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7. What are the basic features of asexual reproduction?

Ans. Basic feature for asexual reproduction are:

(1) Only one organism is involved.

(2) Cell divisions are either amitotic or mitotic.

(3) New organisms are genetically identical to parents.

(4) Formation of gametes and their fertilization does not occur.

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8. What is a clone? Why do offspring's formed by asexual reproduction exhibit remarkable similarity?

Ans. Cells derived from a common ancestor are known as clone. Offspring obtained from asexual reproduction has only one parent, their is no chances of variation in their chromosomes. Hence, they are exactly similar with their parents.

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9. List two important functions of gonads.

Ans. Functions of gonads

a) It produces gametes in male and female

b) It produces sex hormones

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10. What is the function of cowper's gland and prostate gland?

Ans. Cowper's glands – It secretes a white, viscous and alkaline secretion which acts as lubricant.

Prostate gland – The secretion of this gland keeps the sperm active and mobile.

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11. List various reproductive parts of flower

Ans. Reproductive organs of flower are -

a) Androecium (male reproductive part) – It has two parts filament and anther. Another has four pollen sacs which contain pollen grains. Pollen grains produce two male gametes.

b) Gynoecium (Female reproductive part) – It has three parts – ovary, style and stigma.

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12. What is the difference between internal & external fertilization?

Ans.

Internal fertilization	External fertilization.
Male gametes are discharged inside the body of female.	Both male & female gametes are discharged outside the body.
Fusion of gametes occurs inside the body of female parent.	Outside the body of female parent
For ex – Insects, reptiles, birds & human beings	For ex – fishes & amphibians.

13. Name the type of reproduction involved in the following –

(i) A slice of bread has greenish – yellow patches.

(ii) Potato in the store room starts sprouting

Ans. i) Spore formation

ii) Vegetative propagation

14. Give two reasons for the appearance of variations among the off springs formed by sexual reproduction.

Ans. An offspring produced by sexual reproduction has variations because –

a) It involves two parents, so the offspring has some characteristics of male and some of female.

b) Copying of DNA is not exactly same as parent.

15. Name the organism causes syphilis. Mention two symptoms.

Ans. Syphilis is caused by bacteria. Symptoms are –

a) Causes sores and lesions in the genital tract.

b) Burning sensation at urination.

16. How does human foetus derive nutrition?

Ans. A special disc like structure is formed between the embryo and the uterus wall called placenta. It is a connection between the mother and the foetus. This disc remains embedded in the uterine wall. It contains villi on the embryo's side of the tissue. On the mother's side are blood spaces, which surround the villi. This provides a large surface area for the transfer of nutrients mother to foetus.

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17. Why are testes and ovaries considered as primary sex organs?

Ans. Testis and ovaries are called primary sex hormones because they produce gametes and sex hormones.

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18. What is the difference between fission and budding?

Ans.

Fission	Budding
It is a type of asexual reproduction in which one parent organism divides into two or many new organisms	It is a type of reproduction is which out growth (bud) is formed on the parent organism and it separates to form new organism
Parental Identity lost	Parental identity maintained

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19. Mention function of testis in humans?

Ans. Function of testes –

a) Spermatogenesis – Testes produce male gametes sperm.

b) Secretion of hormone – Testes secrete hormone testosterone – the male sex hormone which helps in regulation of spermatogenesis and also maintains structure and function of secondary sex characters like facial, axial and public hair, voice moustache, etc.

20. Why does menstruation occur?

Ans. When ovum does not get fertilized, due to non – availability of sperm in the female body, then longer needed and hence it breaks. So, the thick and soft inner lining of uterus along with the blood vessels and the dead ovum comes out of the vagina in the form of blood, called menstruation.

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21. How will an organism be benefited if it reproduce through spores?

Ans. The spores are covered by thick walls that protect them until they come into contact with suitable moist surface and can begin to grow.

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22. How is process of pollination different from fertilization?

Ans. Distinction between pollination and fertilisation:

Pollination	**Fertilisation**
Pollination refers to the process of transfer of pollen grains from anther to stigma of flower.	Fertilisation refers to fusion of male and female gamete to form a zygote.

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

Ans. Secretions of seminal vesicles and prostate gland provide fluid medium to sperm to move and also provide nutrition to them.

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

Ans. During puberty breast size begins to increase with darkening of the skin of the nipples at the tip of breasts. Also, girls begin to menstruate at around this time.

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

Ans. Copper-T cannot protect the woman from acquiring sexually transmitted disease. It will protect her from only unwanted pregnancy.

26. What are the advantages of sexual reproduction over asexual reproduction?

Ans. Sexual reproduction leads to variation due to recombination of genetic material DNA. These variations are essential for survival of species. On the contrary, asexual reproduction does not bring about variations.

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

Ans. In human beings, testes performs dual function:

(i) Production of sperms

(ii) Secretion of male hormone testosterone.

28. How are the modes of reproduction different in unicellular and multicellular organism?

Ans. In unicellular organisms, cell division, or fusion leads to the creation of new individuals.

In multicellular organisms with simple body organization budding, fragmentation may work but in complex multicellular organisms only sexual reproduction takes place.

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

Ans. The consistency of DNA copying during reproduction is important for the maintenance of body design features that allow the organism to use the particular niche. Reproduction is, therefore, linked to the stability to populations of species.

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30. A couple wants to space the birth of their second child. Suggest one preventive method which could be observed

(a) By the husband

(b) By the wife for the same.

Ans. (a) Use of condoms by the husband

(b) Use of oral pills or loop or Copper-T by the wife.

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31. A girl attains her puberty at the age of 11 years and a boy at 13 years but, still they are asked to refrain from sex, why?

Ans. They are asked to refrain from sex because:

1. They are not physically, emotionally mature enough to be able to bear the responsibility of the child.

2. They may suffer from reproductive tract infections.

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32. A pregnant woman visits a doctor to determine the sex of her child. The doctor refused to perform the test. Why is she being denied

Ans. The doctor refused to perform the test in order to prevent female feticide which leads to an alarming decline in child sex ratio.

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33. Blue prints of body design are stored in the DNA. Why?

Ans. The chromosomes present in the nucleus of a cell contain information for inheritance of features from parents to next generation in the form of DNA molecule. The DNA is the information source for making proteins. Thus, blueprints of the body design are stored in the DNA.

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34. Protozoan reproduce by binary fission as well as by multiple fission. In your opinion which process is better and why? 2 Marks

Ans. Multiple fission is better than binary fission because:

1. More number of individuals is produced.

2. It helps to tide over unfavourable conditions.

35. What causes joining up of stock and scion in grafting technique of vegetative propagation in plants? Define the terms stock and scion. Name one positive trait each of the plant contributing scion and stock should have.

Ans. Stock is the root of the plant which is being grafted on and scion is the plant which is grafted on the stock. Any desirable trait which is required in the offspring is the positive trait. For Example, large no. of fruit production.

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36. Why is it said that "sexual reproduction promotes diversity of characters in the off springs"?

Ans. It is because sexual reproduction results from the fission of two gametes coming from two different and sexually distinct individuals. This leads to variation, is necessary for evolution.

37. Name the causative organism of syphilis and gonorrhea grafted on the other plant and it contributes the stem. The plant contributing scion should have large sized fruits and the plant contributing stock should have deep root system.

Ans. Treponema pallidum and Nisseria gonorrhoeae.

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38. What happens if the fallopian tubes are partially blocked and the ovulated eggs are prevented from reaching the uterus?

Ans. Fertilization may take place but the zygote may develop in the tube Stead of uterus.

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39. Why are variation possible in progeny of sexually reproduative individuals?

Ans. Variations are possible in progeny of sexually reproductive individuals because copy of DNA in newly formed cell is not identical to copy DNA of original cell.

3 Marks Questions

1. What changes occur in girls and boys in the age group of 10 -14 years?

Ans. Changes in males (boys)
1) Widening of shoulder.
2) Deepening of voice
3) Appearance of beard and moustaches
4) Growth of sex organs

Changes in females (girls)
1) Widening of pelvis and hips.
2) High pitch voice.
3) Growth of auxiliary and pubic hair
4) Initiation of menstrual cycle.
5) Growth of mammary glands.

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2. Describe sexually transmitted diseases (STDs) and mention the ways to prevent them.

Ans. Those infectious diseases which are spread by sexual contact called sexually transmitted diseases (STDs)

Methods for prevention of STDs

a) The people should be educated about various STDs

b) Extra – marital relations should be avoided

c) Sex without proper precaution should be avoided

d) High standard of moral education should be give to the people.

3. Name the surgical methods of birth control in human males and females respectively.

Ans. Surgical methods of birth control are –

a) Castration – Removal of testes from the body of a male

b) Ovariectomy – Removal of ovaries from the body of a female

c) Vasectomy – small pieces of both the vas deferens are cut and removed.

d) Tubectomy – Small pieces of both the fallopian tubes are removed.

e) Laparoscopy – Fallopian tubes are blocked with the help of an instrument called laparoscope

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4. What are the essential requisites for sexual reproduction?

Ans. Essential requisites for sexual reproduction are –

a) Transfer of germ cells – Specialized germ – cells have to fuse together, which can happen by either of the following modes –

(i) External release of germ cells – In flowering plant

(ii) Internal transfer of germ cells – In animal cells.

Requirement of special organs –

For example –

a) An erectile organ called penis

b) Organs which can carry the baby for long period

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5. What is micropropogation? Mention its advantages.

Ans. Micropropagation – It is a type of artificial vegetative propagation in which an isolated plant part is cultured under aseptic conditions with proper nutrient medium. Advantages of micropropagation.

a) It is a quick method of multiplication of plants.

b) Virus free plants are produced by this method from virus infected plants

c) It can overcome seed dormancy

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6. Mention the events taking place when the ovum is fertilized in fallopian tube till it is implanted in the uterus of human female.

Ans. After fertilization, the zygote starts dividing by repeated mitotic divisions called cleavage. In about 4 -5 days after fertilization, zygote becomes a multicellular structure called blastocyst. The blasto cyst gets attached to the lining of uterus is called implantation.

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7. What are the post fertilizational changes in the flower?

Ans. Post – fertilization changes in flowers are –

a) The sepals, petals and stamens wither off

b) Style and stigma degenerate

c) Ovary develops into fruit

d) Ovules grows into seed

e) Integuments of the ovule act as seed coats.

f) Fertilized egg gets converted into embryo which bear plumule, radicle and cotyledons.

g) Fertilized polar nuclei form endosperm which may or may not be consumed during seed development.

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8. What are the major factors responsible for population explosion?

Ans. Reason for population explosion –

(i) Better medical facilities – Better medical facilities have resulted in fall of death rate.

(ii) Lack of education and awareness – This is a major factor since people become prey to ignorance

(iii) Religions – For some people, family planning is against the norms set by their religion.

(iv) Control over epidemics – Various medical technologies has made it possible to fight against epidemics.

(v) Sanitary conditions – There is a lot of improvement in sanitary conditions which led to increase in population.

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9. What are the advantages of vegetative propagation?

Ans. Advantages of vegetative propagation –

a) It is a rapid, cheap and easy method of reproduction for the multiplication of plants

b) Genetically identical plants (clones) are produced by this method

c) Superior quality fruits or flowers can be produced by grafting.

d) Disease free plants can be produced by this method

e) Early flowering and fruit formation

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10. Describe any 3 methods of asexual reproduction

Ans. Methods of asexual reproduction –

a) Primary fission – It is a type reproduction in which one parent organism divides into two new organisms. Firstly nucleus divide and then division of cytoplasm takes place.

b) Spore formation – A spore is a small microscopic structure with a thick wall. Spores are formed in a structure called sporangium. Nucleus inside sporangium divides repeatedly and produces many nuclei. Each nucleus is surrounded by cytoplasm and called spore.

c) Fragmentation – It is the breaking of an organism into two or more parts upon maturation, each of which grows to form a new individual.

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11. What changes occur in ovaries during menstrual cycle?

Ans. Change occurs in ovaries during menstruation

a) 1 – 4 days – Corpus luteum degenerates. The ovary starts preparing for the maturation of a new follicle.

b) 5 – 13 days – Ovarian follicle develops to optimum. Estrogen secreted by ovaries causes thickening of uterine wall.

c) 14 day – Egg gets released from the ovary. It enters the fallopian tube, known as ovulation.

d) 15 to 28 days – After releasing the egg, the follicle part produces corpus luteum which produces progesterone. If pregnancy has not occurred, corpus luteum degenerates corpus luteum. This restarts menstrual cycle once again.

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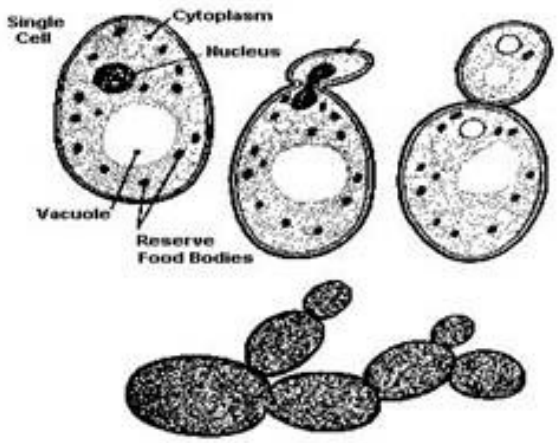
12. Describe budding in yeast, a fungus

Ans. a) It is a type of asexual reproduction in which an outgrowth (bud) is formed on the parent organism due to single cell division.

b) The bud gradually grows in size and gets detached form the parent body.

c) Detached bud develops into an adult organism, similar to the parent.



13. What is the importance of reproduction?

Ans. Importance of reproduction –

a) Maintenance of the existence – Organisms are maintaining their existence on the earth since their origin, million year ago, only because of reproduction.

b) Preservation of species – Species (a group of similar organisms) are preserved because of reproduction. It is possible because reproducing organisms produce new individuals which are very similar to themselves.

c) Role in evolution – some variations is produced in the new organisms during reproduction which play an important role in evolution.

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14. How are spores produced in sporangium of Rhizopus?

Ans. a) A spore is a small microscopic structure with a thick wall.

b) Spores are generally formed in a structure called sporangium which reassembles formed in a structure called sporangium which resemble blob on – a – stick.

c) Sporangia are formed at the tip of erect fungal hypha.

d) In each sporangium, a nucleus divides several times producing a large number of nuclei. Nuclei get surrounded by a little cytoplasm and develop into thick – walled cells or spores.

e) The wall of sporangium breaks to release the spores in air.

f) On germination in the presence of moist surface, each spore gives rise to a new organism.

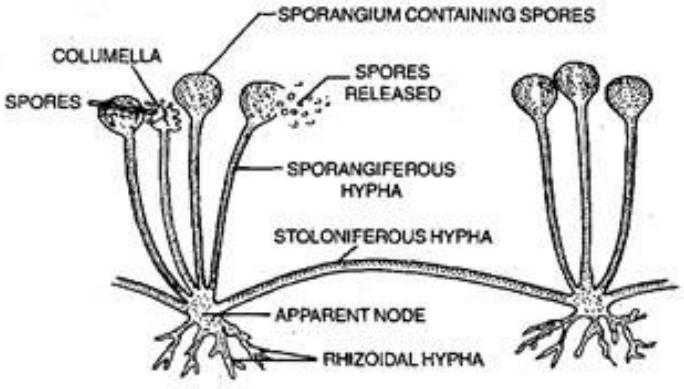


Fig. 7.10. Spore formation in bread mould or Rhizopus.

15. Diagrammatically represent binary fission in amoeba

Ans.

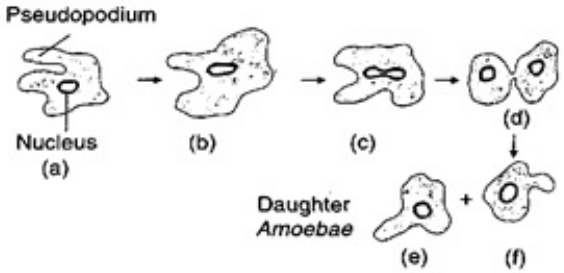
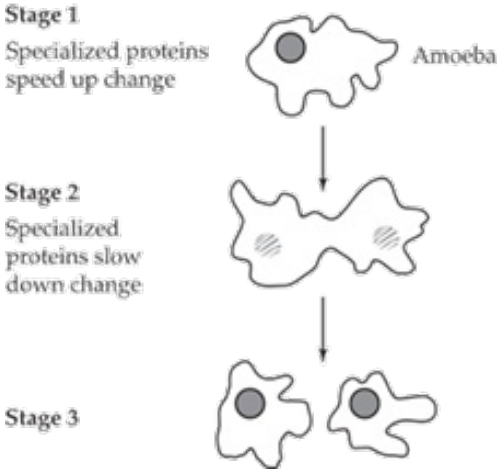


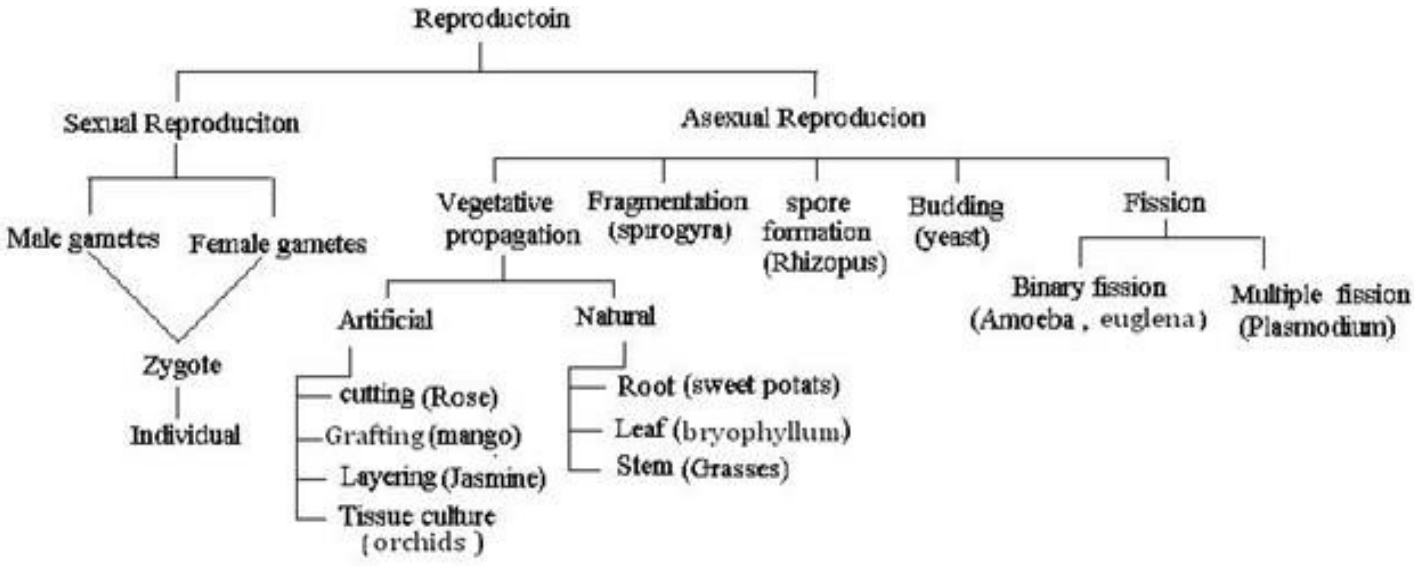
Fig. 4.1: Binary fission in *Amoeba*.

CELL DIVISION IN AN AMOEBA



16. Draw a flow chart showing various types of reproduction with examples.

Ans.



17. What is grafting? Why is it used in horticulture practices?

Ans. In grafting, cutting of a plant stem is attached to another rooted plant. The cutting of stem which is grafted on the other plant is scion and the rooted plant on which the cutting is grafted is called stock. The scion and stock are placed one over other and tied in such a way that there is no gap between them. The cambium activity takes place among them and they get joined. Grafting is used in plants which do not produce extensive roots.

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18. What are the different methods of contraception?

Ans. Different methods of contraception are –

a) Barrier method – In this method, a device used to prevent the entry of sperms in the female genital tract example – Condom, Diaphragm, Cervical caps.

b) Chemical method – In this method certain drugs (containing hormones) are used by the females. These drugs are avaiblabe in the form of pills. There are two kinds of pills commonly used for preventing pregnancies – oral pills and vaginal pills or creams.

c) Intrauterine contraceptive devices (IUCD'S) – IUCD like copper – T is placed in the uterus – IUCD prevent implantation of the fertilized ovum inside the uterus.

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19. What is AIDS? Name its causal organism. Mention its symptoms.

Ans. AIDS is a sexually transmitted disease. Its full form is acquired immune deficiency syndrome. It is a viral disease, caused by human immune deficiency virus. Its symptoms are-

a) Destroys the immune system of body.

b) Persistent cough and fever.

c) Body attacked by other diseases like pneumonia, TB and certain cancers.

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20. Explain vegetative reproduction through layering. Give examples.

Ans. It is a type of artificial vegetative reproduction in which a branch of the parent plant is buried in the soil. The portion of the branch which is in contact with the soil produces roots

and this rooted branch is called layer. Layer is then detached form the parent plant which acts as a new plant. Example – Jasmine.

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21. What is the importance of DNA copying in reproduction?

Ans. DNA contains information for the inheritance of features from parents to next generation. DNA presents in nucleus of cells are the information source for making protein. If information is different, different protein will be made that lead to altered body design.

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

Ans. Variations are useful for the survival of species in changed environment situations. If a population of reproducing organism were suited to a particular niche and if the niche is drastically altered the population could be wiped out. However, some variations are present some species will survive. Thus, variation is useful to species but not the individual.

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23. How does binary fission differ from multiple fissions?

Ans. Difference between binary fission and multiple fission:

Binary fission	Multiple fission
Splitting of unicellular organisms like amoeba into two equal halves during cell division is termed binary fission.	Division of single-celled organisms such as malarial parasites into many daughter cells simultaneously is termed multiple fission.

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

Ans. The reason is that complex organisms are not merely random collection of cells. Specialized cells are organized in them as tissues are organized in organs. These organs have to be placed at definite positions in the body. So, regeneration is not possible in multicellular organism.

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25. Why is vegetative propagation practiced for growing some types of plants?

Ans. (i) Plants raised by vegetative propagation can bear flower and fruits earlier than those produced from seeds.

(ii) Such methods also make possible the propagation of plants such as banana, orange, rose and jasmine that have lost the capacity to produce seeds.

(iii) All plants produced by this method are genetically similar enough to the parent plant to have its all characteristics.

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26. Why is DNA coping essential part of the process of reproduction?

Ans. DNA contains information for the inheritance of features from parents to next generation. DNA presents in nucleus of cells are the information source for making protein. If information is different, different protein will be made that lead to altered body design.

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

Ans. The embryo gets nutrition from the mother's blood with the help of a special tissue called placenta. This is a disc which is embedded in the wall of uterus. It contains finger-like projections villi on the embryo's side of the tissue. On mother's sides are blood spaces, which surround the villi. This provides a large surface area for glucose and oxygen to pass the mother to the embryo and waste products from embryo to mother.

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28. Why does menstruation occurs.

Ans. When in human female if the egg is not fertilized, it lives for about one day. Since the ovary releases one egg every month, the uterus also prepares itself every month to receive a fertilized egg.

Thus, its lining becomes thick and spongy. This would be required for nourishing the embryo if had fertilized. However, this lining is not required any longer. So, the lining slowly breaks and comes out through the vagina as blood and mucous. This cycle takes roughly every month and is known as menstruation.

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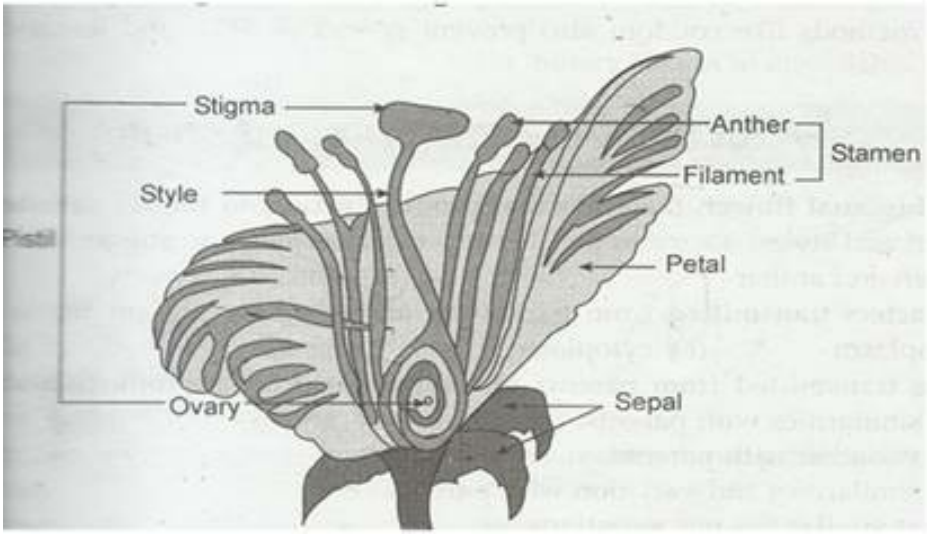
29. Draw a labeled diagram of the longitudinal section of a flower.

Ans.



30. What are the different methods of contraception?

Ans. Various methods used for regulation of child birth can broadly categories as:

(i) Barrier methods: In this method, physical devices such as condom, diaphragm, cervical cap and copper-T are used.

(ii) Chemical method: use of spermicidal jelly by woman, oral pills and vaginal pills.

(iii) Surgical method: In surgical method, a small portion of vas deferens in male and the oviduct of female, is surgically removed or ligated. It is called vasectomy in male and Tubectomy in females.

31. What could be the reasons for adopting contraceptive methods?

Ans. The sexual act always has the potential to lead to pregnancy. Pregnancy will make major demands on the body and the mind of the woman and if she is not ready for it, her health will adversely affected. Therefore, adopting contraceptive methods are essential. Some contraceptive methods like condom also prevent spread of STDs and lethal diseases like HIV-AIDS.

32. Producing individuals by parents consume a lot of energy. So, why should an individual organism waste energy in the process, it does not need to stay alive?

Ans. Reproduction, unlike other life processes is not essential to maintain the life of an individual organism. But it is essential for providing stability to the population of species.

Maintaining the species is essential for maintaining balance in nature.

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33. Blue prints of body design are stored in the DNA. Why?

Ans. The chromosomes present in the nucleus of a cell contain information for inheritance of features from parents to next generation in the form of DNA molecule. The DNA is the information source for making proteins. Thus, blueprints of the body design are stored in the DNA.

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34. Why is variation beneficial to the species but not necessary for the individual?

Ans. Variation is beneficial to the species as it enables a species for its survival. A favourable variation makes an organism to live better in a changed environment and an unfavourable variation will not. So it is not necessarily true that a variation is beneficial to the individual always.

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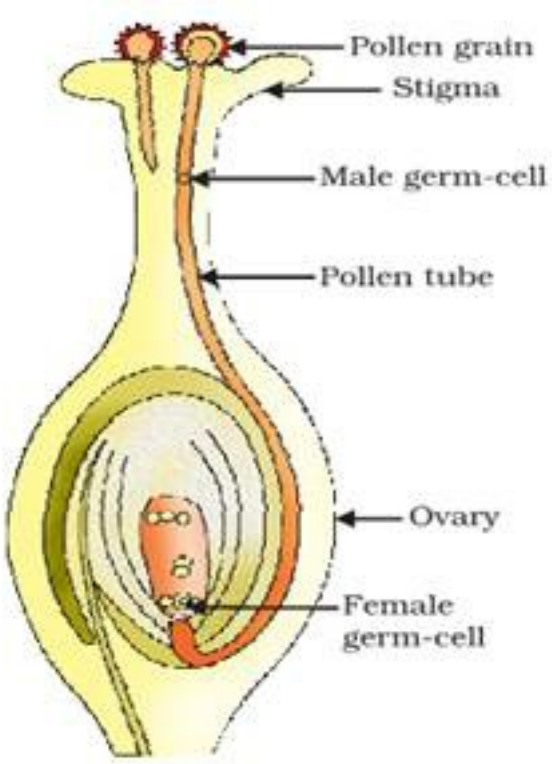
35. What is the advantage of reproduction though spores in the case of Rhizopus?

Ans. The spores are covered by thick walls that protect them until they come into contact with another moist surface and can begin to grow.

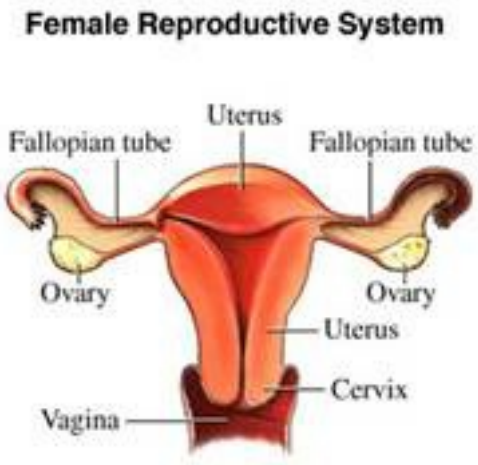
5 Marks Questions

1. Describe triples fusion in plants? Where does it occur? Draw a neat and clean well labeled diagram to support your answer.

Ans. After pollination, the pollen grains germinate n the stigma by producting pollen tube. This pollen tube is formed from inner wall of the pollen grain. It penetrates the stigma and passes through the style and enters the ovule through an opening called male gamete it releases two male gametes in the embryo sac. One male gamete fuses with egg cells and second fuses with two polar nuclei. The fusion of one male gamete with the egg cells is called syngamy. The fusion of second male gamete with two polar nuclei is called triple fusion. This process occurs in ovary.



2. Draw a well labeled diagram of female reproductive system and mention its parts.



Ans. a) A pair of ovaries – ovaries produces ova and female sex hormone. One egg is produced every month by one of the ovaries. Ova are picked up by the funnel shaped fallopian tubes.

b) Fallopian tubes – There are two fallopian tubes. It carries ova from ovary to the uterus. Fertilization occurs in fallopian tubes.

c) Uterus – Pear shaped hollow muscular organ. Fertilized ovum remains attached to the uterus wall.

d) Vagina – It is a narrow muscular tube. Its upper end is connected to the cervix of the uterus and lower end opens outside through an opening. It is a place for copulation.

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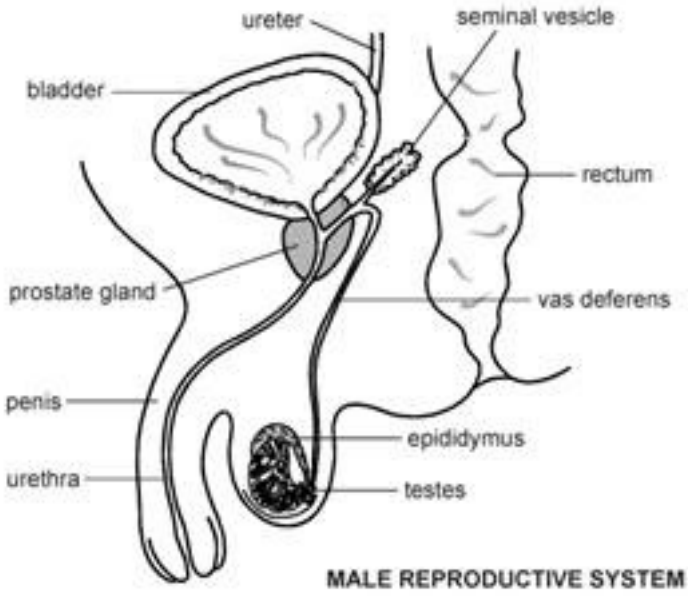
3. Draw a well labeled diagram of male reproductive system and describe its parts.



MALE REPRODUCTIVE SYSTEM

Ans. a) A pair of testes – Each testis produces sperms and male sex hormone called testosterone. Testes are present in small pouch called scrotum.

b) Epididymis – It is a long coiled tube. The head is connected with testis and tail is connected with vas deferens

c) Vas deferens – It is a long tube which begins from the tail of epididymis

Urethra – It receives the vas deferens from both the testes. It opens outside through penis. It carries both sperms and urine.

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4. Differentiate between asexual and sexual reproduction.

Ans.

Asexual Reproduction	**Sexual Reproduction**
Only one parent is involved	Two parents are involved
Offspring resembles exactly with the parent	Organisms do not resemble exactly, but certain features of both the parents
Cell divides mitotically	Mitosis and meiosis both divisions are involved.
Gametes are not produced	Gametes are produced
Not fertilization	Fetilisation of gametes
Organisms produced have less adoptability	Organism produced has more adaptability
Variations are absent	Variations are present

5. What is the need of population control?

Ans. Overpopulation leads to a number of problems like –

a) Unemployment – More number of people means more jobs and if sufficient numbers of jobs are not available, it leads to unemployment.

b) Poverty – If there are more persons and the income is less, it becomes poorer with the addition of every child.

c) Food supply – If the population increases and the food production does not increase; this will lead to shortage of food supply.

d) Hygienic condition – more people in small area generally make the condition unhygienic for survival

e) Educational problem – It becomes difficult for the government to provide education to all

f) Housing problem – It also creates housing problem.

g) Pollution – More pollution with increasing population.

h) Decrease in natural resources – More people will decrease the natural resources quickly.