

How do Organisms Reproduce?



NCERT IN-TEXT QUESTIONS SOLVED

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

Ans. DNA copying is an important phenomenon of reproduction through which the organisms pass on their characteristics to their offspring. It maintains the characteristics in different generations of the species. It also produces variations which are useful for the survival of species for long time.

Q2. *Why is variation beneficial to the species but not necessary for the individual?*

Ans. Accumulation of variations after several generations results in new set of traits required for survival. As they show results after many generations so they are not important for individual.

Q3. *How does binary fission differ from multiple fission?*

Ans. Binary Fission: An organism is divided into two individuals. Mitotic division takes place resulting in two identical individuals or daughter cells. e.g., *Amoeba*.

Multiple Fission: Mitotic division takes place. The nucleus divides repeatedly to form a number of equal sized and similar individuals, e.g., Plasmodium.

Q4. *How will an organism be benefited if it reproduces through spores?*

Ans. During adverse circumstances spore remain coated with protective layer. This helps an organism survive adverse conditions. Spores are means to tide over bad phases.

Q5. *Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration?*

Ans. More complex organisms cannot give rise to new individuals because:

1. Their body design is highly complicated.
2. There are specific organs to do specific functions.
3. There is a labour division in the body of complex organisms.
4. Exception is lizard, which can regenerate its tail.

Q6. *Why is vegetative propagation practised for growing some types of plants?*

Ans. The process by which some plants can reproduce asexually by their vegetative parts like roots, stems and leaves is called vegetative propagation. It has many advantages. Plants raised by this method can bear flowers and fruits earlier than those produced from seeds. Plants that have lost capability to produce seeds like banana, orange, rose and jasmine can be propagated. All plants produced are genetically similar to the parent plant.

Q7. *Why is DNA copying an essential part of the process of reproduction?*

Ans. DNA copying is needed because information stored in DNA is used to make protein. Synthesis of different proteins will lead to altered body design. Thus, reproduction at its most basic level involves making copies of the blueprints of body design.

Q8. *How is the process of pollination different from fertilization?*

Ans. **Pollination** is the transfer of pollen grains from the anther of a stamen to the stigma of a carpel. These are transferred by agents such as insects, birds, wind or water.

Fertilization is defined as the fusion of a male gamete (sperm) with a female gamete (ovary) to form a zygote by sexual reproduction.

Q9. *What is the role of seminal vesicles and prostate gland?*

Ans. **Seminal vesicles** are a pair of thin-walled muscular and elongated sacs which secrete a fluid for nourishment of sperms.

Prostate glands also produce a fluid which is released in the urethra along with secretion of seminal vesicle. It affects the vaginal pH so that sperms move smoothly inside the vagina.

Q10. *What are the changes seen in girls at the time of puberty?*

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

Q11. *How does the embryo get nourished inside the mother's body?*

Ans. The embryo grows inside the mother's womb and gets nourishment from its mother's blood through placenta. Placenta contains villi which connects the embryo with the mother's blood. These villi provides a large surface area for glucose and oxygen to pass from mother to the embryo.

Q12. If a woman is using copper-T, will it help in protecting her from sexually transmitted diseases?

Ans. No, it will not protect the woman from sexually transmitted diseases as fluid to fluid contact occurs in the vagina.

QUESTIONS FROM NCERT TEXTBOOK

Q1. Asexual reproduction takes place through budding in

- (a) amoeba. (b) yeast. (c) plasmodium. (d) leishmania.

Ans. (b) 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

Ans. (c) Vas deferens

Q3. The anther contains

- (a) sepals (b) ovules (c) carpel (d) pollen grains

Ans. (d) pollen grains

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

Ans. In **asexual reproduction**, the offspring is almost identical to the parent because they have the same gene as their parent. Thus, variation is not present.

Sexual reproduction involves fusion of male and female gametes. The offspring exhibits diversity of characters because they receive some genes from the mother and some from the father. The mixing of genes in different combinations; results in genetic variations. This variation leads to the continuous evolution of various species to produce various organisms.

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

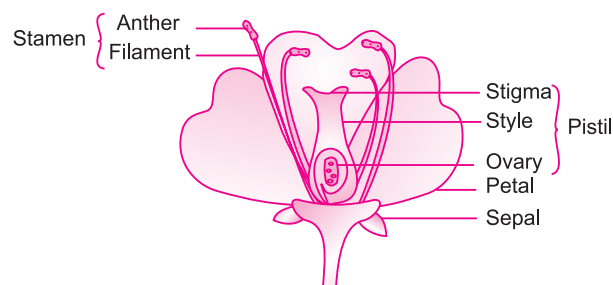
Ans. The function of testis is to produce sperms and male sex hormone called testosterone.

Q6. Why does menstruation occur?

Ans. Menstruation occurs in females when the egg produced inside the cervix is not fertilized. Since the egg does not fuse with the male gamete, so the thick and soft lining of uterus having a lot of blood capillaries in it are not required. This unfertilized egg dies within a day and the lining breaks down shedding blood along with other tissues. This comes out of the vagina in the form of bleeding.

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

Ans.



Q8. What are the different methods of contraception?

Ans. Contraception is the method to avoid pregnancy. Various methods of contraception are as follows:

Physical Barrier Methods: Use of condoms, diaphragms, cervical caps can be used. These prevent the entry of sperms into the female genital tract by acting as a barrier between them.

Chemical Methods: Oral pills can be used which change the hormonal balance and stop release of egg. Vaginal pills kill the sperms.

Surgical Methods: This includes **vasectomy** (sperm duct is removed) in males and **tubectomy** (removal of small portion of fallopian tube) in females.

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

Ans. Unicellular organisms have only one cell. There is no separate tissue for reproduction. So, they can reproduce by the process of fission or budding. Multicellular organisms contain various cells and have separate system for reproduction. So, they can reproduce by both sexual and asexual methods.

Q10. How does reproduction help in providing stability to the population of species?

Ans. Stability is provided by equalizing the birth and death ratio. Thus, the rate of birth should approximately be equal to the rate of death.

Q11. What could be the reasons for adopting contraceptive methods?

Ans. The reasons for adopting contraceptive methods could be:

1. Protection from sexually transmitted diseases such as HIV-AIDS, gonorrhoea, syphilis, warts etc.
2. Restricting the number of children.
3. Sufficient gap between successive births.
4. Enjoying a good reproductive health.
5. Controlling population.

MORE QUESTIONS SOLVED

I. MULTIPLE CHOICE QUESTIONS

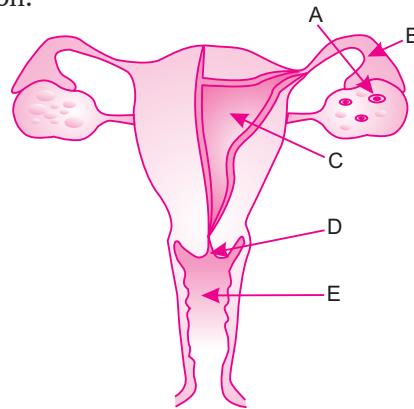
1. The simple animals like *Planaria* can be cut into a number of pieces and each piece grows into a complex organism. What is the process known as?
(a) Budding (b) Fragmentation
(c) Spore formation (d) Regeneration
2. _____ is the portion on which grafting is done and it provides the roots?
(a) Stock (b) Scion
(c) Both (a) and (b) (d) None of these

3. Where does fertilisation occur in human females?
 - (a) Uterus
 - (b) Cervix
 - (c) Oviduct
 - (d) None of these
4. Which one of the options is incorrect?

Vegetative propagation is practised because

 - (a) Plants which produce non viable seeds can be grown.
 - (b) It is a easier method than sowing seeds.
 - (c) Such plants produce seeds and fruits much earlier than other methods
 - (d) For obtaining better species of plants.
5. Growing foetus derive nutrition from mother's blood through
 - (a) uterus
 - (b) fallopian tube
 - (c) placenta
 - (d) cervix
6. What is the surgical method of contraception in female and male respectively?
 - (a) Tubectomy and Vasectomy
 - (b) Vasectomy and Copper-T
 - (c) Tubectomy and Copper-T
 - (d) None of these
7. Which of the following is not a sexually transmitted disease?
 - (a) Warts
 - (b) Kala azar
 - (c) Syphilis
 - (d) Gonorrhoea
8. What is the puberty age in human males?
 - (a) 8-10
 - (b) 10-12
 - (c) 12-14
 - (d) 14-16
9. Fruit is formed from
 - (a) Stamen
 - (b) Stigma
 - (c) Ovary
 - (d) Ovule
10. Which of these is not the function of the seminal vesicles present in human males?
 - (a) To covert the sperms in a fluid medium.
 - (b) To provide nutrition.
 - (c) To make their transport easier.
 - (d) To make them sticky.
11. The female reproductive part of the flower consists of
 - (a) Stigma, Anther, Filament
 - (b) Style, Ovary, Thalamus
 - (c) Stigma, Ovary, Style
 - (d) Anther, Corolla, Filament
12. In which of the following plant bud in notches of leaves help in its propagation?
 - (a) Radish
 - (b) *Bryophyllum*
 - (c) Bougainvillea
 - (d) Jasmine

13. Choose the right option.



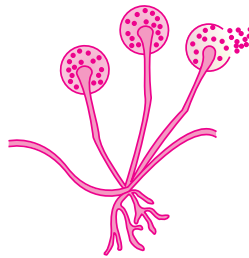
A	B	C	D	E
(a) Fallopian tube	Oviduct	Uterus	Cervix	Vagina
(b) Oviduct	Vas deferens	Ovary	Vagina	Cervix
(c) Ovary	Oviduct	Uterus	Cervix	Vagina
(d) Ovary	Fallopian tube	Uterus	Vagina	Cervix

- 14.** The process of the transfer of pollen grains from the flower of one plant to the stigma of the flower of another plant of the same species is known as
 (a) Cross pollination (b) Fertilisation
 (c) Self pollination (d) None of the above
- 15.** What are the functions performed by the testis in human males?
 (a) Production of gametes–eggs and secretion of sex hormones–estrogen
 (b) Production of gametes–sperms and secretion of sex hormones–testosterone
 (c) Production of gametes–sperms and secretion of sex hormones–estrogen
 (d) None of the above
- 16.** Why are the testes located outside the abdominal cavity in scrotum?
 (a) Because sperm formation requires more spaces.
 (b) Because sperm formation requires a lower temperature.
 (c) Because sperm formation requires a higher temperature.
 (d) None of the above.
- 17.** IUCD is for
 (a) Vegetative propagation (b) Contraception
 (c) Increasing fertility (d) Avoiding miscarriage
- 18.** The two oviducts in a human female unite into an elastic bag like structure known as
 (a) Vagina (b) Uterus
 (c) Fallopian tube (d) Cervix

19. Which of the following disease is transmitted sexually?

- (a) Kala azar
- (b) Jaundice
- (c) Elephantiasis
- (d) Syphilis

20. Identify the organism



- (a) *Rhizobium*
- (b) *Rhizopus*
- (c) Rhizoid
- (d) Mushroom

21. Which of the following is a contraceptive?

- (a) Copper-T
- (b) Condom
- (c) Diaphragm
- (d) All of these

22. The process where the unfertilised egg is released out of the body with the blood used to nourish the embryo is known as

- (a) Menstruation
- (b) Fertilisation
- (c) Germination
- (d) Pollination

23. After fertilisation name the part which develops into the seeds

- (a) Ovary
- (b) Ovule
- (c) Pollen grain
- (d) None of the above

24. Unisexual flowers contain

- (a) Both stamen and carpel
- (b) Only stamen
- (c) Only carpel
- (d) Either stamen or carpel

25. *Spirogyra* reproduces by

- (a) Fission
- (b) Regeneration
- (c) Fragmentation
- (d) Budding

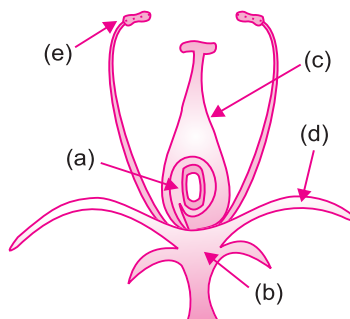
26. The process in which the cytoplasm of a single eukaryotic cell is divided to form two daughter cells is known as?

- (a) Karyokinesis
- (b) Cytokinesis
- (c) Meiosis
- (d) Mitosis

27. Unicellular organisms reproduce by

- (a) Mitotic cell division
- (b) Meiotic cell division
- (c) Both (a) and (b)
- (d) None of the above

28. Chose the correct option



A	B	C	D	E
(a) Ovary	Thalamus	Filament	Sepal	Anther
(b) Ovary	Thalamus	Style	Sepal	Anther
(c) Ovule	Sepal	Style	Thalamus	Filament
(d) Ovule	Sepal	Style	Thalamus	Stamen

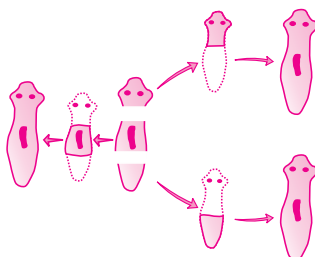
29. What is the surgical method of contraception used in human males?

- (a) Vasectomy (b) Condoms
(c) Contraceptive pills (d) Tubectomy

30. Vegetative propagation in potato takes place through

- (a) Stem (b) Root
(c) Leaves (d) Seeds

31. The type of reproduction taking place is



- (a) Budding (b) Fragmentation
(c) Regeneration (d) Fission

32. The anther contains

- (a) Sepals (b) Ovules
(c) Carpel (d) Pollen grains

33. The full form of AIDS is

- (a) Acquired Immune Deficiency System
(b) Acquired Immune Disease Syndrome
(c) Acquired Immediate Deficiency Syndrome
(d) Acquired Immuno Deficiency Syndrome

34. Union of male and female gametes forms

- (a) Egg (b) Embryo
(c) Zygote (d) Spore

35. Identify the type of cell division taking place

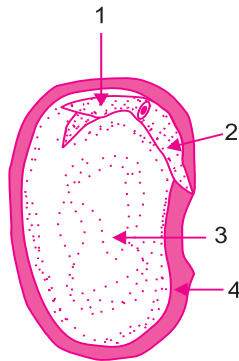


- (a) Longitudinal cell division taking place
(b) Transversal cell division in *Paramecium*
(c) Longitudinal cell division in *Paramecium*
(d) Transversal cell division in *Amoeba*

36. The number of chromosomes in human ovum is

- (a) 21 (b) 22
(c) 23 (d) 24

37.



Choose the correct option

1	2	3	4
(a) Plumule	Radicle	Cotyledon	Seed coat
(b) Radicle	Plumule	Seed coat	Cotyledon
(c) Cotyledon	Seed coat	Radicle	Plumule
(d) Radicle	Plumule	Cotyledon	Seed coat

38. The common passage meant for transporting urine and sperms in males is

- (a) Ureter (b) Vas deferens
(c) Urethra (d) Anus

Answers

1. (d)	2. (a)	3. (d)	4. (c)	5. (c)	6. (a)	7. (b)
8. (c)	9. (c)	10. (d)	11. (c)	12. (b)	13. (c)	14. (a)
15. (b)	16. (b)	17. (b)	18. (b)	19. (d)	20. (b)	21. (d)
22. (a)	23. (b)	24. (d)	25. (c)	26. (d)	27. (a)	28. (b)
29. (a)	30. (a)	31. (c)	32. (d)	33. (d)	34. (c)	35. (b)
36. (c)	37. (a)	38. (c)				

II. VERY SHORT ANSWER TYPE QUESTIONS (1 Mark)

Q1. *Why do organisms reproduce?*

Ans. Organisms reproduce to perpetuate their race and maintain their species.

Q2. *How do we know that two different individuals belong to the same species?*

Ans. Members of same species are capable of interbreeding the same species by the similarity in their body design and other physical features.

Q3. *Name the nucleic acids.*

Ans. DNA and RNA are the two nucleic acids present in the living cells.

Q4. *Give the full form of DNA.*

Ans. Deoxyribo Nucleic Acid.

Q5. *What happens during copying of DNA?*

Ans. Copies of DNA are formed and hereditary information is passed on from one generation to the next.

Q6. *When does copying of DNA occur?*

Ans. Copying of DNA occurs during cell division.

Q7. *The mode of reproduction depends on which feature of the organism.*

Ans. The mode of reproduction depends on the body design of the organism.

Q8. *Name two plants whose flowers are unisexual.*

Ans. Papaya, watermelon.

Q9. *Name two plants whose flowers are bisexual.*

Ans. Mustard, chinrose.

Q10. *What is fertilization?*

Ans. Fertilization is the process of fusion of the male and the female gametes.

Q11. *What is pollination?*

Ans. The process of transfer of pollen grains from the stamen to the stigma of a flower is called pollination.

Q12. *What is the importance of DNA copying in reproduction?*

Ans. DNA copying during reproduction is important for the transfer of parental characters to the offsprings.

Q13. *How does the developing embryo get nourishment inside the mother's body?*

Ans. The embryo gets nourishment from the mother's blood with the help of a special tissue called placenta.

III. SHORT ANSWER TYPE QUESTIONS (2 or 3 Marks)

Q1. Differentiate between asexual and sexual reproduction.

Ans.	Asexual	Sexual
	1. Asexual reproduction involves a single parent. 2. No gametes are formed during asexual reproduction. 3. No or little variations occur during asexual reproduction.	1. Sexual reproduction involves two parents (male and female). 2. Gamete formation takes place in sexual reproduction. 3. Many variations occur during sexual reproduction.

Q2. Enumerate the various methods of asexual reproduction in living organisms.

Ans. The various methods of asexual reproduction are fission (binary and multiple), fragmentation, regeneration, budding, vegetative propagation, spore formation and tissue culture.

Q3. What is binary and multiple fission? Name the organisms in which they occur.

Ans. Binary fission is the division of one parent cell into two identical daughter cells. It takes place in *Amoeba*, *Paramecium*, *Euglena* and other protozoa.

In multiple fission one single celled organism divides into many daughter cells within a cyst. These are released when the cyst breaks. This takes place in *Plasmodium* (malarial parasite).

Q4. What is fragmentation?

Ans. Fragmentation is the method of breaking up of an organism into smaller pieces or fragments which grow into new organisms as in algae *Spirogyra*.

Q5. What is regeneration? Name two organisms that can reproduce by regeneration.

Ans. Many fully differentiated organisms have the ability to give rise to new organisms from their body parts by being cut or broken into many pieces. This is known as regeneration. All organisms do not have the capacity to reproduce by regeneration. *Hydra* and *Planaria* can reproduce by the process of regeneration.

Q6. What is budding? Name two organisms that reproduce asexually by budding.

Ans. In budding a small part of the parents body grows out as a bud which then detaches and becomes a new organism. *Hydra* and yeast reproduce by budding.

Q7. What is vegetative propagation? What are its advantages?

Ans. The process by which some plants can reproduce asexually by their vegetative parts like roots, stem and leaves is called vegetative propagation. It has many advantages. Plants raised by vegetative propagation can bear flowers and fruits earlier than those produced from seeds. Plants that have lost the capacity to produce seeds like banana, rose and jasmine can be propagated by this method. All plants produced by this method are genetically similar to the parent plant.

Q8. How do potato and *Bryophyllum* plants reproduce vegetatively?

Ans. Potato tuber has depressions called “eyes” on its surface. These eyes have vegetative buds in them which germinate to produce a new potato plant. Similarly the fleshy leaves of *Bryophyllum* bear vegetative buds in the notches along the leaf margin. These buds germinate to form small plantlets which form new plants on being detached.

Q9. Name two plants that can reproduce asexually by formation of spores.

Ans. Bread mould (*Rhizopus*) and ferns reproduce asexually by formation of spores.

Q10. What are the limitations of asexual mode of reproduction?

Ans. In asexual mode of reproduction there are no genetic variation so there is less adaptability in the offspring.

Q11. What is the significance of sexual reproduction?

Ans. (a) A sexual reproduction results in new combination of characters and increases genetic variations.

(b) It promotes diversity of characters in the offspring.

(c) It speeds up the process of making variations in the population.

Q12. How is the amount of DNA maintained in each generation?

Ans. The amount of DNA is maintained in each generation by a specialized mode of cell division called meiosis which produces specialized male and female germ cells called gametes which are haploid. One male and female gamete fertilize to give rise to a diploid zygote which has the same chromosome number as the parent. This process maintains the chromosome number and the amount of DNA in each generation.

Q13. State the advantages of seed formation in plants.

Ans. The seed contains the future plant or embryo which can develop into a seedling under appropriate conditions. The seed is in a state of dormancy and can be kept in secure state for long period of time.

Q14. What is germination of seed?

Ans. When the seed gets the right conditions the embryo within it starts growing to form the shoot and the root. When the embryo emerges out of the seed to form a new seedling it is called the germination of seed.

Q15. What is puberty?

Ans. Puberty is the age at which the gametes start forming in the male and female human beings. At this age boys and girls become sexually mature.

Q16. What changes occur in the flower after fertilisation?

Ans. After fertilisation the flower withers. The sepals and the petals dry up, the ovary converts into fruit, the ovule forms the seed and the zygote forms the embryo which is enclosed in the seed.

Q17. Name the agents of pollination.

Ans. The agents that bring about pollination are wind, water, birds and insects.

Q18. State the functions of the human male and female sex hormones.

Ans. The human male sex hormone testosterone regulates the formation of the male gamete, the sperms and brings about changes in appearance seen in boys at the time of puberty.

The human female sex hormone estrogen brings about the changes occurring in girls at puberty and progesterone controls the uterus changes occurring during the menstrual cycle and also helps in maintaining the pregnancy.

Q19. What happens when the egg is fertilised?

Ans. When the egg is fertilised zygote is formed, it starts dividing and gets implanted in the lining of the uterus.

Q20. What is menstruation? Why does it occur?

Ans. Menstruation is the process of breakdown and removal of the inner lining of the uterus along with the blood vessels in the form of vaginal bleeding. This happens after every 28 days if the egg is not fertilised. This takes place in human females and in some primates.

Q21. What is STD? Name two STDs.

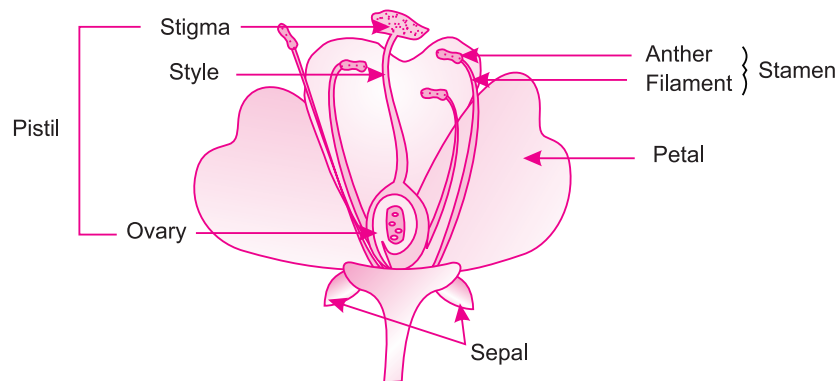
Ans. STD is Sexually Transmitted Disease. Two STDs are syphilis and gonorrhoea.

Q22. What is the role of seminal vesicles and prostate gland?

Ans. These are the accessory glands associated with the male reproductive system. Seminal vesicles and prostate gland secrete a fluid which makes the transport of sperms easier and also provides nourishment to the sperms. This fluid together with the sperms is called the semen.

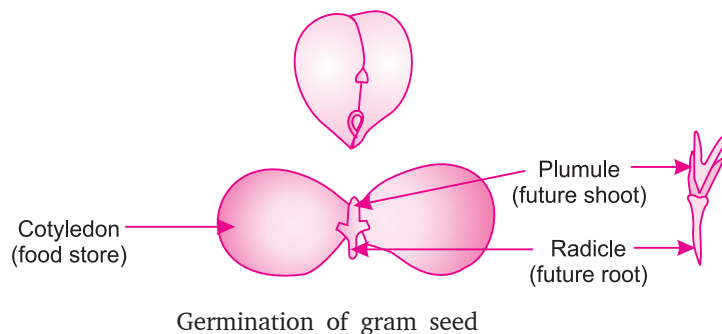
Q23. Draw a well labelled diagram of a bisexual flower.

Ans.



Q24. Draw a well labelled diagram of a dicot seed (gram seed).

Ans.



Q25. Device an experiment to show germination of gram seed.

Ans.

- Soak a few seeds of Bengal gram (chana) and keep them overnight.
- Drain the excess water and cover the seeds with a wet cloth and leave them for a day. Make sure that the seeds do not become dry.
- Cut open the seeds carefully and observe the different parts.
- Compare your observations with the figure above that shows the germination of gram seed and see if you can identify all the parts.

Q26. What does the male and female reproductive system consists of?

Ans. The male reproductive system in human beings consists of testes which produce sperms, vas deferens, seminal vesicles, prostate gland, urethra and penis.
The female reproductive system consists of a pair of ovaries, fallopian tube, uterus and vagina.

Q27. Explain the process of sexual reproduction in plants.

Ans. After the pollen lands on a suitable stigma it germinates to form the pollen tube. The pollen tube grows through the style and carries the male germ cells in it. The pollen tube enters the ovule and the male germ cells fuse with the egg cell to form the zygote. This process is called fertilisation.

Q28. State the changes that occur in human males and females at puberty.

Ans. Puberty is the state of sexual maturity in humans. The changes that take place in males during puberty are growth of hair on the body, appearance of beard and moustache and the voice becomes hoarse. Females show development of breasts, and beginning of menstruation.

Q29. What is self and cross pollination?

Ans. Self Pollination: It is the transfer of pollen grains from the anther of a flower to the stigma of the same or another flower on the same plant.

Cross Pollination: It is the transfer of the pollen grains from the anther of a flower to the stigma of another flower on a different plant of the same species.

Q30. What is 'reproduction'? Mention the importance of DNA copying in reproduction.

(CBSE 2008)

Ans. Reproduction is the process by which the existing organisms produce their own kind. DNA copying during reproduction is important for the transfer of parental characters to the offspring.

Q31. List any two differences between pollination and fertilisation

(CBSE 2008)

Ans.	Pollination	Fertilisation
	1. Transfer of pollen grain from anther to stigma of a flower.	Fusion of pollen nucleus and ovule in the ovary.
	2. It is a physical process, no new substance is formed.	It is a chemical process in which a new structure called zygote is formed.
	3. Its types are self pollination and cross pollination.	Its types are internal and external fertilisation.

Q32. Mention the information source of making proteins in the cell. What is the basic event in reproduction?
(CBSE 2008)

Ans. Cellular DNA is the information source of making proteins in the cell.
The basic event in reproduction is copying of DNA so that the cells can further divide.

Q33. Name one sexually transmitted disease each caused due to bacterial infection and viral infection. How can these be prevented? (AI CBSE 2008)

Ans. Bacterial infection: gonorrhoea

Viral infection: warts and HIV-AIDS

Prevention: Use of condoms by male.

Q34. (a) In human body what is the role of

(i) Seminal vesicles (iii) Prostate glands.

(b) List two functions performed by testes in human beings. (AI CBSE 2008)

Ans. (a) Seminal vesicles: Produce a fluid which makes the transport of sperms easy.

Prostate glands: Produces a fluid which keeps sperms floating in it and provides nourishment.

(b) Two functions of testes:

(i) They secrete hormone: testosterone responsible for the male characteristics.

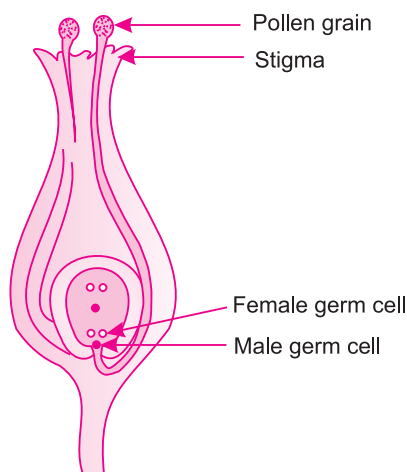
(ii) It helps in the formation of sperms.

Q35. (a) Draw a diagram illustrating, fertilisation in a flowering plant and label it.

Pollen grain, male germ cell, female germ cell, stigma.

(b) Describe the process of fertilisation in plants. (CBSE 2008 F)

Ans. (a)



Fertilisation in a flowering plant

(b) **Fertilisation in plants:** It takes place after the pollination is done.

(i) The pollen grain develops a tube called pollen tube which carries male germ cells to the ovary.

(ii) The male germ cell fuses with the female germ cell in the ovary and forms zygote.

(iii) The zygote further forms embryo.

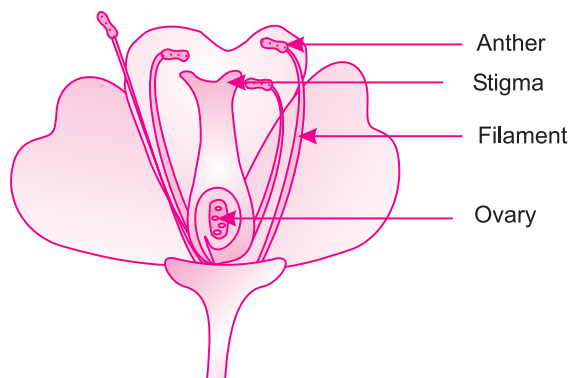
(iv) The embryo develops a protective coating and forms seed.

(v) The ovary forms a fruit with seed in it.

Q36. (a) Draw a diagram showing longitudinal section of a flower and label on it: stigma, ovary, anther, filament.

(b) How is the process of pollination different from fertilisation? (CBSE 2008 F)

Ans. (a)



Parts of a flower

(b) Pollination	Fertilisation
1. Transfer of pollen grain from anther to stigma of a flower. 2. It is a physical process, no new substance is formed. 3. Its types are self pollination and or cross pollination.	Fusion of pollen nucleus and ovule in the ovary. It is a chemical process in which a new structure called zygote is formed. Its types are internal and external fertilisation.

Q37. (a) Name the parts labelled A, B, C, D, and E

(b) Where do the following functions occurs?

(i) Production of an egg

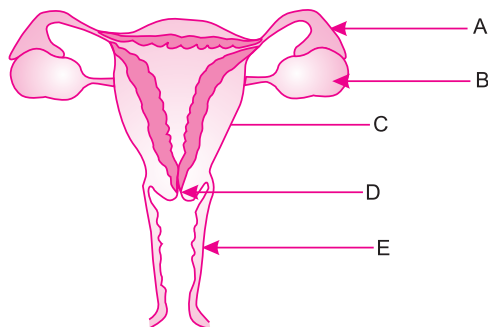
(ii) Fertilisation

(iii) Implantation of zygote

(c) What happens to the lining of uterus

(i) before release of fertilised egg.

(ii) if no fertilisation occurs.



Ans. (a) A → Fallopian tube
 B → Ovary
 C → Uterus
 D → Cervix
 E → Vagina

(b) (i) Production of an egg — ovary

(ii) Fertilisation — fallopian tubes

(iii) Implantation of zygote — lining of the uterus

(c) (i) Before release of fertilized egg – the uterus wall becomes thick.

(ii) If no fertilisation occurs – the lining of uterus slowly breaks down and comes out in the form of bleeding.

Q38. (a) Explain the terms:

- (i) *Implantation* (ii) *Placenta*

(b) *What is the average duration of human pregnancy?* (CBSE 2009)

Ans. (a) (i) **Implantation:** The zygote when fixes itself on the inner thick wall of uterus for further development is called implantation.

(ii) **Placenta:** It is the special tissue in the form of a disc which is embedded in the uterus wall. It provides large surface area for glucose and oxygen to pass from mother to the embryo. The waste generated by the embryo also passes into the mother's blood through this placenta

(b) It takes nine months for the human pregnancy.

Q39. *What are sexually transmitted diseases? Name four such diseases. Which one of them damages the immune system of human body to complete?* (CBSE 2009)

Ans. The diseases that spread due to sexual contact from infected person to a healthy person are called sexually transmitted diseases.

Four STDs:

- (i) Gonorrhoea (ii) Syphilis (iii) Warts (iv) AIDS

AIDS: Acquired Immuno Deficiency Syndrome damages the immune system.

Q40. *Name the following:*

(i) *Name two plants that cannot produce seeds.*

(ii) *An organism that reproduces by budding and regeneration.*

(iii) *An organism that grows by multiple fission*

(iv) *One unisexual flower.*

Ans. (i) *Bryophyllum, Banana* (ii) *Hydra* (iii) *Paramecium* (iv) *Maize flower*

Q41. *What is the role of following in reproduction?*

(i) *DNA*

(ii) *Ovulation*

(iii) *Fertilisation*

(iv) *Puberty*

(v) *Contraception*

Ans. (i) *Variation* (ii) *Egg production* (iii) *Zygote formation*

(iv) *Attainment of sexual maturity*

(v) *Birth control*

Q42. *Give one term for the following:*

(a) *Beginning of menstrual cycle*

(b) *Release of ovum from the ovary*

(c) *Fusion of male and female eggs*

(d) *Prevention of unwanted pregnancy*

(e) *Time for development of offspring in female human.*

Ans. (a) *Menstruation*

(b) *Ovulation*

(c) *Fertilisation*

(d) *Contraception*

(e) *Nine months*

Q43. *Name the hormone the secretion of which is responsible for dramatic changes in appearance in girls when they approach 10–12 years of age.* (CBSE 2008)

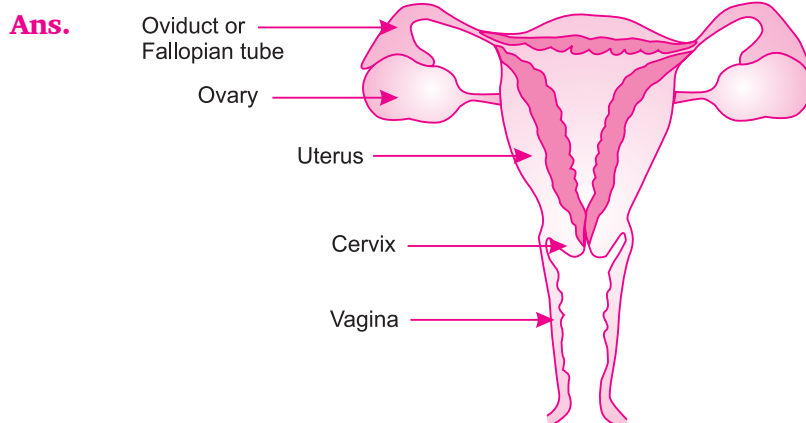
Ans. *Oestrogen and Progesterone.*

Q44. Why is DNA copying an essential part of the process of reproduction? (AI CBSE 2009)

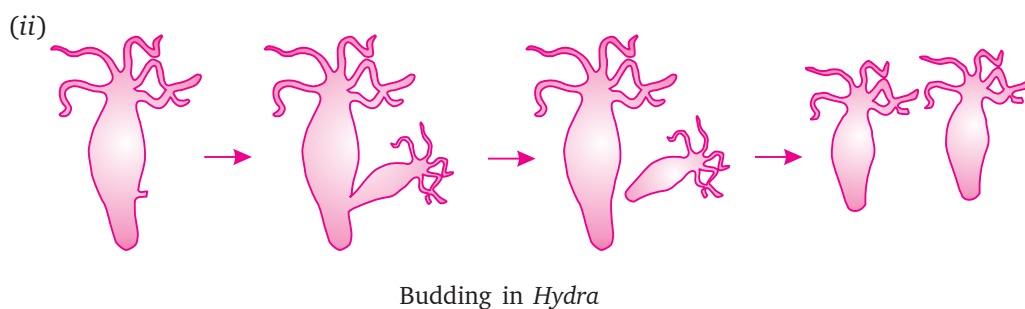
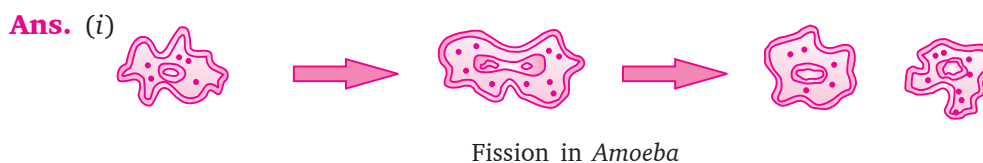
Ans. Refer to Q7. on page 88.

IV. LONG ANSWER TYPE QUESTIONS (5 Marks)

Q1. Draw a well labelled diagram of the female reproductive system in humans.



Q2. With the help of diagrams explain the process of budding in Hydra and fission in Amoeba.



Q3. State the functions of the following:

- (a) testis (b) ovaries (c) vas deferens (d) stamen (e) pistil

Ans. (a) **Testis:** Form the male gametes the sperms and secrete the male sex hormone testosterone
(b) **Ovaries:** Form the female gamete ovum or the egg cell and secrete the female sex hormones estrogen and progesterone.
(c) **Vas deferens:** Transport the sperms from the testis to the exterior.
(d) **Stamen:** Form the pollen grains in flowers. The pollen grains bear the male gametes.

- (e) **Pistil:** The ovary forms the egg and the stigma helps in attracting the pollen grains for fertilisation.

Q4. What are the various artificial methods of vegetative propagation in plants?

Ans. The various artificial methods of vegetative propagation in plants are:

- (a) **Cutting:** In this any part of the plant like the stem root or leaf is cut and buried in the soil which gives rise to a new plant as in rose, guava, grapes etc.,
- (b) **Layering:** In plants like jasmine and strawberry a branch from the plant is brought down too the ground and covered with damp soil. After few days new roots are formed and the branch is cut from the main plant.
- (c) **Grafting:** In this the stem of a plant is given a cut and the other plant is fixed (with its stem) in it e.g., sugarcane, roses, grapes are grown for agricultural purposes.
- (d) **By Roots:** Plants like sweet potato show the growth of more plants from a root.
- (e) **Stem:** Plants like potato, ginger, onion, they show growth from their stems.
- (f) **By Buds:** Plant like *Bryophyllum* and potato grow small buds on them and a growth of new plant takes place.

Q5. Illustrate the following with the help of a suitable diagrams:

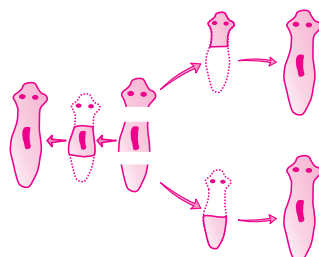
(i) Regeneration in Planaria

(ii) Budding in Hydra

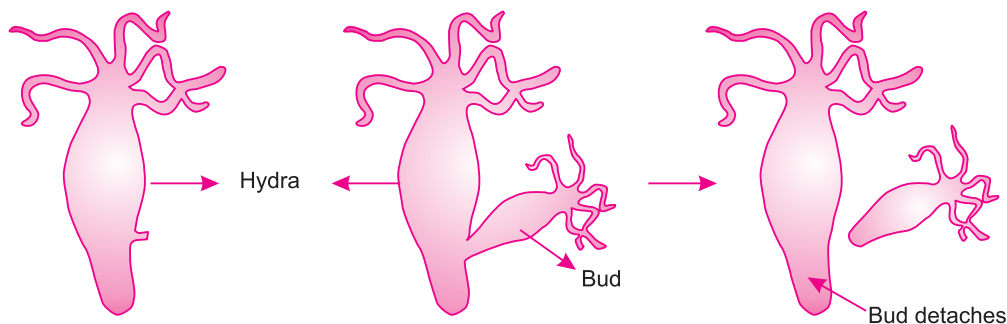
(AI CBSE 2008)

Ans. (i) Regeneration in Planaria

Planaria: If it is divided into 3 parts a, b and c, each part grows as a new individual



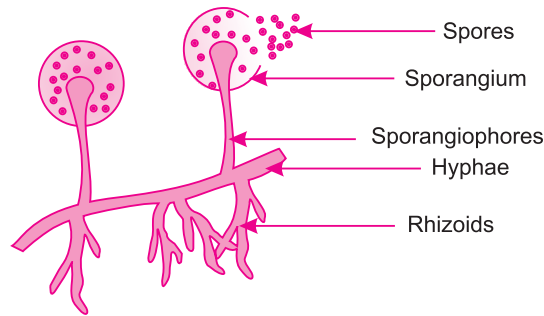
(ii) Budding in Hydra



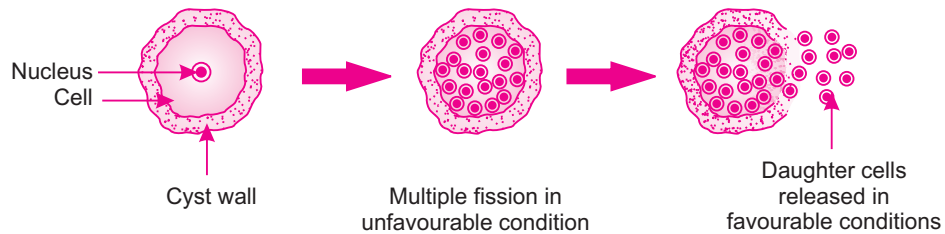
Q6. Illustrate the following with the help of suitable diagram (AI CBSE 2008)

(i) Spore formation in *Rhizopus* (ii) Multiple fission in *Plasmodium*

Ans. (i) Spore formation in *Rhizopus*



(ii) Multiple fission in *Plasmodium*



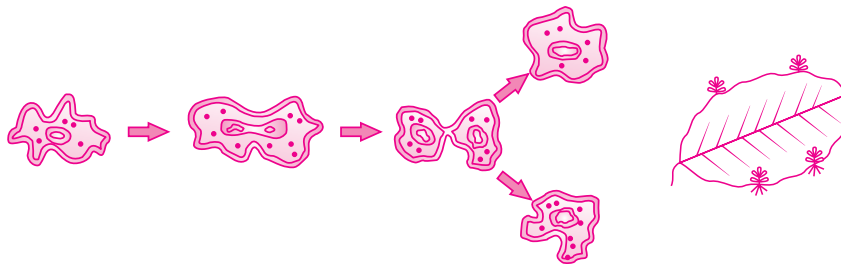
Q7. Illustrate the following with the help of suitable diagram

(i) Binary fission in *Amoeba*

(ii) Leaf of *Bryophyllum* with buds

(AI CBSE 2008)

Ans. (i) Binary fission in *Amoeba* (ii) *Bryophyllum* leaf

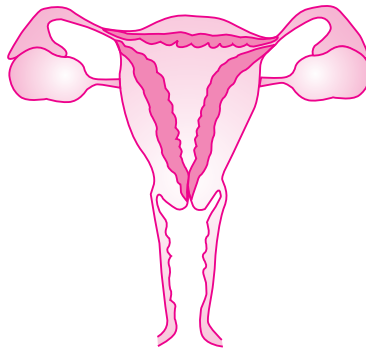


TEST YOUR SKILLS

Q1. Observe the given figure of female reproductive system. Draw the figure in answer copy, label and name the following:

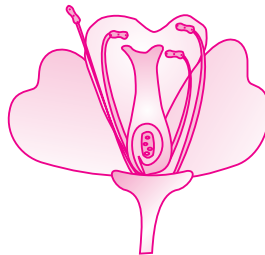
(a) Label the part where fertilisation takes place.

(b) Label the part where zygote implants.



- (c) Label the part where eggs are formed.
- (d) Label the part where embryological development takes place.
- (e) Label the part that produces hormones.

Q2. Observe the figure given below



Draw the figure in your answer copy and label the following and name it:

- (a) Female whorl of the flower
- (b) Part which attracts insects
- (c) Part which becomes seed
- (d) Part which becomes fruit
- (e) Male gametes of the flower

Q3. Draw male reproductive system and label the parts that you get as answer from (a)—(e).

- (a) Where testes are located.
- (b) Where the fluid is formed which helps sperms to swim.
- (c) Where sperms are formed.
- (d) Which is blocked to prevent pregnancy (surgically).
- (e) Which makes a fluid that keeps the sperms alive for longer time.

Q4. Draw a diagram and label the following parts of seed (germinating stage):

- (a) Part that will become shoot
- (b) Part that will become root.
- (c) Part that contains food for the growth.

Q5. How will an organism be benefited if it reproduces through spores?

- Q6.** Name two plants whose flowers are unisexual.
- Q7.** Give the full form of DNA.
- Q8.** Name two organisms that reproduce by budding.
- Q9.** What are the limitations of asexual mode of reproduction?
- Q10.** What is the role of seminal vesicles and prostate gland?
- Q11.** Draw a well labelled diagram of a dicot seed.
- Q12.** Explain the terms:
- (a) implantation (b) placenta
- Q13.** What are STD? Name four such diseases.
- Q14.** (i) Draw a diagram illustrating fertilisation in a flowering plant and label pollen grain, male germ cell, stigma.
- (ii) Describe the process of fertilisation in plants.
- Q15.** What are the different methods of contraception, in male and female human being?