8

How do Organisms Reproduce?

In the Chapter

- Reproduction, unlike other life processes, is not necessary to maintain the life of an individual organism.
- Reproduction involves the creation of a DNA copy and additional cellular apparatus by the cell involved in the process.
- In fission, many bacteria and protozoa simply divide into two or more daughter cells.
- Various organisms use different modes of reproduction depending on their body design.
- Organisms such as hydra can regenerate if they are broken into pieces. They can also give out buds which mature into new individuals.
- Roots, stems and leaves of some plants develop into new plants through vegetative propagation.
- Sexual reproduction involves two individuals for the creation of a new individual.
- These are examples of asexual reproduction where new generations are created from a single individual.
- Reproduction in flowering plants involves transfer of pollen grains from the anther to the stigma which is referred to as pollination. This is followed by fertilisation.
- DNA copying mechanisms creates variations which are useful for ensuring the survival of the species. Modes of sexual reproduction allow for greater variation to be generated.
- Changes in the body at puberty, like increase in breast size in girls and new facial hair growth in boys, are signs of sexual maturation.
- The male reproductive system in human beings consists of testes which produce sperms, seminal vesicles, vas deferens, prostate gland, urethra and penis.
- The female reproductive system in human beings consists of ovaries, fallopian tubes, uterus and vagina.
- Sexual reproduction in human beings involves the introduction of sperm in the vagina of the female. Fertilisation takes place in the fallopian tube.
- Contraception to avoid pregnancy can be achieved by the use of oral pills,

Intext Exercises

Page No. 128

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

Ans. Organisms look similar because their body designs are similar. If body designs are to be similar, the blueprints for these designs should be similar. Thus, reproduction at its most basic level will involve making copies of the blueprints of body designs.

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

Ans. The DNA copies generated in a reproducing cell are similar but may not be identical to the original. Some of these variations in the DNA copies do not lead drastic outcomes. These surviving cells are similar but subtly different from each other. Thus inbuilt tendency for variation during reproduction cause to develop new species. So, variations are beneficial to the species but not necessarily for the individual.

Page No. 133

1. How does binary fission differ from multiple fission?

Ans. Binary fission : Some unicellular organisms split into two halves to create two new individuals. This is called binary fission. Example : many bacteria and protozoa such as amoeba.

Multiple fission : Some unicellular organisms like malarial parasite (plasmodium) divide into many daughter cells to form many new individuals. This process of fission is called multiple fission.

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

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. Thus, it is benefited to the organisms like rhizopus to reproduces through spores.

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

Ans. More complex organisms cannot reproduce by regeneration process because :

(i)Their body is highly complicated.

(ii) There are specific organs to do specific functions.

(iii) There is a labour division in the body of complex organisms.

(iv) Regeneration is carried out by specialised cells, which are not present in complex organisms.

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

Ans. Some plants bear no seeds. This method makes possible the propagation of plants such as banana, orange, rose and jasmine that have lost the capacity to produce seeds. Vegetative propagation takes place only in those plants whose parts like the root, stem and leaves have the property of propagation. By this process, we can reproduce the plants having more similar characteristics.

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

Ans. DNA copying is a basic event in reproduction. Two copies are built in reproducing cells. These two copies need to separate from each other. One copy of DNA remain in the original cell and other copy need to have any organised cellular structure for maintaining life processes. So DNA copy is accomplished by creation of an additional cellular structure. In this way, two copies are separated and two new cells are formed.

Page No. 140

1. How is the process of pollination different from fertilisation?

Ans. Pollination : The process in which pollen grains are transferred to the stigma from stamen of

the flower is called pollination. In this process no fusion of two cells takes place.
Fertilisation : The process in which fusion of two cells (one male and other female) take place to form zygote is called fertilisation.

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

Ans. The male reproductive system contains some glands like seminal vesicle and prostate gland. These glands add their secretions so that sperms remain a fluid. This fluid makes the transport of sperms easier. It also provides nutrition to the sperms.

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

Ans. (i)Breast size begins to increase.
(ii) The skin of nipples at the tip of the breast becomes dark.
(iii) Menstruation starts at this time.

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

Ans. After fertilisation, zygote is formed which developed into embryo. The embryo is attached with uterus walls. This process is called implantation. The embryo gets nutrition from the mother's blood with the help of a special tissue called placenta. Placenta is a disc which is embedded in the uterine wall. It contains villi on the embryo's side of the tissue. On the mother's side there are blood spaces, which surrounded the villi. This provides a large surface area of glucose and oxygen to pass from the mother to the embryo. In this way, embryo gets its nutrition.

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

Ans. No, copper-T will not help in protecting her from sexually transmitted diseases.

Exercise

1. Asexual reproduction takes place through budding in
(a) amoeba. **(b) yeast.**
(c) plasmodium. **(d) leishmania**

Ans. (b) yeast

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

Ans. (c) Vas deferens

3. The anther contains
(a) sepals **(b) ovules**
(c) carpel **(d) pollen grains**

Ans. (d) Pollen grains

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

Ans. (i) Sexual reproduction promotes diversity.
(ii) It results in new combination of genes, i.e. causes genetic variations.
(iii) It plays a prominent role in the origin of new species.

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

Ans. Testis is the main reproductive organ of make reproductive system. There are two testis located outside the abdominal cavity in scrotum. Scrotum lower the temperature than the normal body temperature to activate the testis. Testis produce the germ cells or sperm. The sperms are the tiny bodies that consist of mainly genetic material and a long tail which helps them to move towards the female germ cells.

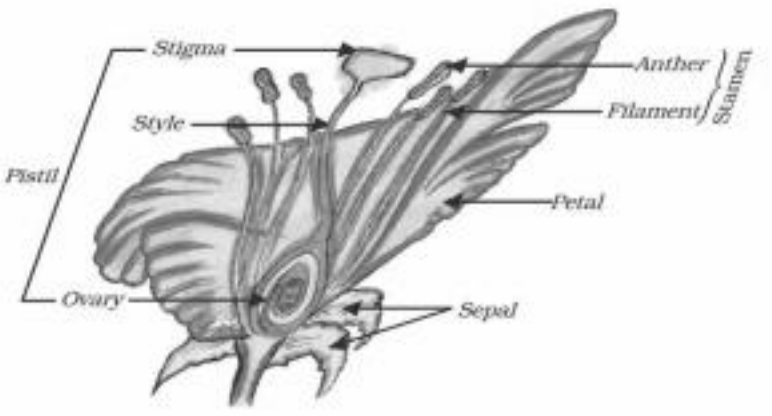
6. Why does menstruation occur?

Ans. If the egg is not fertilised, then it is lost after one day. The uterus prepares itself to receive a fertilised egg. The lining of uterus becomes thick and spongy. These lining slowly breaks and

comes out through vagina as blood and mucous. This process is called menstruation. So, it takes place when no fertilisation of egg takes place.

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

Ans.



8. What are the different methods of contraception?

Ans. There are various methods of contraception :

(i) Barriers : It prevents the sperm to reach near the egg. For example, condoms on the penis or similar coverings worn in the vagina can used for this purpose.

Intra uterine devices such as copper-T are also popular. However, they can cause side effects due to irritation of the uterus. It prevents implantation of embryo.

(ii) **Chemicals :** There are various chemicals or the pills which act by changing the hormonal balance of the body so that eggs are not released and fertilisation cannot occur.

(iii) Surgical : If the vas deferens in the male is blocked, sperm transfer will be prevented. If the fallopian tube in the female is blocked, transfer of egg is prevented and no fertilisation takes place.

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

Ans. The unicellular organisms have only one cell. There is no separate tissues for reproduction. So, they can be reproduce by the process of fission (binary or multiple) or budding as in yeast.

The multicellular organisms contains various cells and separate systems, so they can reproduce by both sexual and asexual reproduction.

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

Ans. Population of organisms fill well defined places or niches in the ecosystem using their ability to produce. The rate of birth must be at par with the rate of death to provide stability of population of a species. And it is possible only by reproduction. Further, the consistency of DNA copying during reproduction is important for the maintenance of body design features that allow the organism to see that particular niche. Reproduction is therefore linked to the stability of population of species.

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

Ans. Reproduction is the process by which organisms increase their population. But the size of the human population is a cause for concern for many people. This is because an expanding population makes it harder to improve everybody's standard of living. It is the main reason for poor standards of living for many people. So to balance the size of population, contraceptive methods are adopted.

Additional Questions

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

Ans. DNA copying is an essential part of the process of reproduction for the inheritance of features from parents to the next generation.

2. Mention the mode of reproduction used by (a) Amoeba (b) Planaria.

Ans. (a) Binary fission, (b) Regeneration.

3. State the method used for growing rose plants.

Ans. Cutting.

4. State what type of method is used for growing Jasmine plant.

Ans. Layering.

5. Why is sexual reproduction considered to be superior to asexual reproduction in terms of evolution ?

Ans. Sexual mode of reproduction is a source of variation in a population of organism which ensures survival of the species.

6. Malaria parasite divides into many daughter individuals simultaneously through multiple fission. State an advantage the parasite gets because of this type of reproduction.

Ans. (i) Progeny is identical like parent and in large number.
(ii) Single individual can reproduce.

7. Define reproduction.

Ans. Reproduction is the process by which a living organism is able to produce new individual of its own kind.

8. Where is the (i) male gamete and (ii) female gamete formed in a flowering plant ?

Ans. (i) Anther part of stamen.
(ii) Ovary of carpel.

9. How many male gametes are present in one pollen grain ?

Ans. Two male gametes are present in one pollen grain.

10. What is syngamy?

Ans. The fusion of male gamete with the female gamete in the ovule is called syngamy.

11. What is zygote?

Ans. The combined cell which is formed by the fusion of a male gamete with female gamete is called zygote.

12. What is fertilisation ?

Ans. The process of fusion of a male gamete with a female gamete is called fertilization.

13. Where does fertilization take place in the human being?

Ans. It takes place in the fallopian tube of female sex organ.

14. What is ovulation ? When does it take place in the human female ?

Ans. The release of egg cell (ovum) from the ovary is called ovulation.
In the human female, ovulation takes place in the mid of the menstrual cycle (i.e., on an average on the 14th day of this cycle).

15. What is puberty ?

Ans. The age, at which sex organs become functional and sex hormones begin to produce, is called puberty. A girl attains puberty earlier than a boy.

16. What is menstruation ?

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

17. What is gestation ?

Ans. The time period from fertilization upto the birth of the baby is called gestation. In human beings, it is of about 40 weeks or 280 days.

18. What is implantation ?

Ans. The embedding and the attachment of the embryo on the thick lining of the uterus is called implantation.

19. What is regeneration? State a reason why a more complex organism cannot give rise to new individuals through this method.

Ans. Regeneration : The process of getting back a full organism from its body parts is called regeneration.

In complex multicellular organism, specialised cells make up tissues, tissues make up organs organs make up organ system and finally organ systems make up organisms. Since complex multicellular organisms have a very high degree of organisation in their body, they cannot be reproduced from their cut body parts by the process of regeneration.

20. Mention the role of placenta in the development of human embryo.

Ans. The role of placenta is to facilitate exchange of materials between mother and growing foetus.

The developing embryo also generate waste substances which can be removed by transferring them into mother's blood through placenta. Apart from this placenta also secretes certain hormones which maintain the pregnancy.

21. Name one organism which reproduces by spore formation. Why do spores have thick wall?

Ans. The method of reproduction used by common bread mould (Rhizopus) is spore formation. Thick wall enables them to survive under unfavourable conditions like lack of food, lack of water and extreme temperatures.

22. What is puberty? Name any two changes seen in girls at the time of puberty.

Ans. Puberty: The age at which the sex hormones (or gametes) begin to be produced and the boy and girl become sexually mature is called puberty.

The various changes which occur in girls at puberty are :

(i) Hair grow under armpits and private region.

(ii) Mammary glands (or breasts) develop and enlarge.

23. "DNA copies generated during reproduction will be similar but may not be identical to the original". Give reason.

Ans. It is so because, no biochemical reaction is absolutely reliable. Therefore, it is only to be expected that the process of copying the DNA will have some variations each time. As a result, the DNA copies generated will be similar, but may not be identical.

24. Why is vegetative propagation practiced for growing some types of plants? Give one example of a plant which is grown by this method.

Ans. Vegetative propagation is practised because:

(i) Some plants do not produce viable seeds or produce very few seeds.

(ii) Characters of the parent plant can be preserved.

(iii) Several plants in a short time can be produced quickly.

Banana, rose, jasmine and orange are grown by this method.

25. Why does DNA copying take place during the process of reproduction ?

Ans. DNA copying leads to DNA copied which are similar to the original. Thus, offsprings have similar body design feature, inherited to them from their parents. DNA copying is an essential part of reproduction.

26. Explain giving one example of each, the unisexual and the bisexual flowers.

Ans. (i) The flower is called unisexual when it contains either stamens or carpels.

Example: Papaya, watermelon.

(ii) The flower is called bisexual when it contains both stamens and carpels.

Example: Hibiscus, mustard.

27. List any four reasons for vegetative propagation being practiced in the growth of some type of plants.

Ans. Vegetative propagation is practiced for growing some types of plants because it has the following advantages:
(i) All the plants produced by vegetative propagation are genetically similar enough to the parent plant to have all its characteristics.
(ii) The fruit trees grown from seeds may take many years before they start to bear fruits. But the fruit trees grown by vegetative propagation methods like cuttings or by grafting start to bear fruits much earlier.
(iii) The plants grown by vegetative propagation usually need less attention in their early years than the plants grown from seeds.
(iv) Many plants can be grown from just one parent plant by artificial propagation.

28. Describe the role of fallopian tubes in the female reproductive system.

Ans. Fallopian tubes are a pair of long convoluted tubes that carry ova or eggs from the ovary to the uterus. The fallopian tubes has a funnel shaped opening near the ovary. These tubes from both the sides open into an elastic bag like structure, the uterus. The fertilization of egg by a sperm takes place in the fallopian tubes.

29. State the role of: (i) Seminal vesicles and (ii) Prostate gland in the human body.

Ans. Seminal vesicles and prostate gland occur in male reproductive system. The seminal vesicles and prostate gland add their secretions to the vas deferens which carries sperms from the testes. The secretions of seminal vesicles and prostate gland provide nutrition to the sperms and also make their further transport easier.

30. How does an embryo get nourishment from its mother's body?

Ans. The embryo gets nutrition from the mother's blood with the help of a special tissue called placenta. Placenta is a disc-shaped tissue which is embedded in the uterus will. It has villi on the embryo side of the tissue. On the mother's side are blood spaces which surround the villi. Placenta provides a large surface area for glucose and oxygen to pass from the mother to the embryo. The developing embryo also produces waste substances which can be removed by transferring them into the mother's blood through the placenta.

31. Explain vegetative propagation with the help of two examples. List two advantages of vegetative propagation.

Ans. In vegetative propagation a new plant can be obtained from vegetative parts such as stem, root and leaves. Examples:
(i) Sugarcane is grown by using stem cuttings.
(ii) Leaf of Bryophyllum has buds on its margin. When it falls or touches the soil, new plants arise from these buds.

Two advantages of vegetative propagation:
(i) It is the only means of propagating such plants which do not produce viable seeds or produce very few seeds such as banana, orange, grape, rose and pineapple.
(ii) Many identical plants having same characters can be raised by this method.

32. Write the full form of DNA. Name the part of the cell where it is located. Explain the role in the process of reproduction of the cell.

Ans. (i) DNA: Deoxyribo nucleic acid. (ii) It is located in the nucleus.
(iii) DNA copying is accompanied by the creation of an additional cellular apparatus, and the DNA copies separate, each with its own cellular apparatus. In this way, a cell divides to give rise to two cells.

33. (a) Explain the terms :
(i) implantation (ii) placenta
(b) What is the average duration of human pregnancy?

Ans. (a) (i) The embedding of embryo in the thick lining of the uterus is called implantation. (ii)

After implantation, a disc like special tissue develops between the uterus wall and the embryo called placenta. The exchange of nutrients, oxygen and waste products between the embryo and the mother takes place through the placenta.

(b) The average duration of human pregnancy is about nine months and ten days (40 weeks).

34. An individual may have a good health even when the whole of reproductive system is removed. What then is the function of the reproductive system?

Ans. The main function of the reproductive system is to produce the gametes for the sexual reproduction. Reproductive system is not necessary for the survival of the individual. So even if reproductive system is fully removed, the person may have a good health. That is why the persons who are sterile cannot reproduce but can survive.

35. Write short note on orgasm in female.

Ans. During intercourse under the influence of various stimuli, the female becomes excited. The clitoral and genital folds swell and vaginal wall secretes a moist lubricating fluid. The breasts swell and nipples become erect. Orgasm is associated with the contraction of vaginal wall. At orgasm the cervix droops down into the upper portion of vagina and creates a syringing action on the pool of semen.

36. Fertilization is possible if copulation has taken place during middle of menstrual cycle. Give reason.

Ans. Fertilization takes place in the fallopian tube only if mature ovum is released. In a normal menstrual cycle, ovulation occurs during middle of sexual cycle. Thus if copulation occurs only during this period only then fertilization is possible.

37. Define Menstruation, Precocious puberty and Menopause.

Ans. Menstruation. It is a process in which the blood, mucus and uterine tissue is eliminated in female mammals.

Precocious puberty. Normally a woman's fertile life starts from the age of puberty (about 13 years), but under some abnormal conditions like high level of sex hormones (LH and FSH) , menstruation starts at an early age than the normal, it is called precocious puberty.

Menopause. The natural physiological stoppage of menstruation is called menopause or the arrest of reproductive capacity at the age of 45-50 is called menopause. Woman is unable to bear the children.

38. Name and define the four stages in the uterine cycle.

Ans. Uterine Cycle. The uterine cycle consists of four distinct stages as follows :

1. Menstruation. It lasts for five days.

2. The proliferative phase. From the end of menstruation to the release of ovum, it lasts for 10-14 days.

3. Ovulatory phase. It is the release of ovum from the ovary.

4. Luteal. It lasts from ovulation to menstruation for about 10 days.

39. Write a short note on child birth or parturition.

Ans. 1. At or about the 40th week of pregnancy, labour sets in. Contraction of the muscles of the uterine wall starts in the early stages of labour. This results in severe pain to the mother. It is known as labour pain.

2. The contraction of the uterine wall brings the baby towards the mouth of the uterus.

3. The amnion bursts at this time which lubricates the vagina and also creates a sort of pressure by which outward progression of the foetus is facilitated.

4. The joint of the pelvic bones becomes more flexible.

5. The cervix and the vaginal passage becomes much more flexible and wider.

6. At the same time, the uterine contractions become more and more forceful due to which the baby is forced out more and more.

7. Finally it comes out completely. Generally the head comes out first followed by the shoulders, then the body and finally the legs.

8. The hormone relax in plays an important role in the relaxation and expansion of the uterus and the vagina.

40. What is placenta?

Ans. It is the structure formed by the union of the foetal and uterine tissue for the purpose of nutrition, respiration and excretion of the embryo. Although the blood vessels of the embryo and the mother come close but these are kept separated by some barriers between them. The useful substances pass from maternal blood to foetal blood while the wastes (excretory products and CO_2) are passed from the foetal blood to maternal blood.

41. Write the functions of placenta.

Ans. The placenta serves primarily as an organ that permits the interchange of materials carried in the blood of mother and foetus. The main functions are:

1. Nutrition. Supply of nutrient materials to foetus.

2. Respiration. Supply of O_2 to foetus and receive CO_2 back from it.

3. Excretion. Fluid nitrogenous waste products escape through the placenta.

4. Barrier. The placenta is barrier like semipermeable membrane.

5. Storage. The placenta stores fat, glycogen and iron for the embryo before the formation of liver.

6. Hormonal function. The placenta secures extra ovarian hormones estrogen and progesterone in female during pregnancy that serves to maintain foetus.

42. What is artificial insemination ? Write the uses of artificial insemination.

Ans. Artificial insemination. A process by which spermatozoa are collected from male and deposited in the female genitalia by instrumentation rather than by natural service is called artificial insemination.

Uses of artificial insemination

(1) The semen of good quality of male animal may be used to inseminate number of females.

(2) The preserved spermatic fluid can be transported to different places.

(3) In case of man who is incapable of producing children this method can be used.

Multiple Choice Questions

1. Offspring formed by asexual method of reproduction have greater similarity among themselves because

(i) asexual reproduction involves only one parent
(ii) asexual reproduction does not involve gametes
(iii) asexual reproduction occurs before sexual reproduction
(iv) asexual reproduction occurs after sexual reproduction

(a) (i) and (ii) (b) (i) and (iii)
(c) (ii) and (iv) (d) (iii) and (iv)

Ans. (a) (i) and (ii)

2. Characters transmitted from parents to offspring are present in

(a) cytoplasm (b) ribosome

(c) golgi bodies (d) genes

Ans. (d) genes

3. Characters that are transmitted from parents to offspring during reproduction show

(a) only similarities with parents
(b) only vairations with parents
(c) both similarities and variations with parents
(d) neither similarities nor variations

Ans. (c) both similarities and variations with parents

4. A feature of reproduction that is common to amoeba, spirogyra and yeast is that

(a) they reproduce asexually
(b) they are all unicellular
(c) they reproduce only sexually
(d) they are all multicellular

Ans. (a) they reproduce asexually

5. In Spirogyra, asexual reproduction takes place by

(a) breaking up of filaments into smaller bits
(b) division of a cell into two cells
(c) division of a cell into many cells
(d) formation of young cells from older cells

Ans. (a) breaking up of filaments into smaller bits.

6. The ability of a cell to divide into several cells during reproduction in Plasmodium is called

(a) budding
(b) reduction division
(c) binary fission
(d) multiple fission

Ans. (d) multiple fission

7. The correct sequence of reproductive stages seen in flowering plants is

(a) gametes, zygote, embryo, seedling
(b) zygote, gametes, embryo, seedling
(c) seedling, embryo, zygote, gametes
(d) gametes, embryo, zygote, seedling

Ans. (a) gametes, zygote, embryo, seedling

8. The number of chromosomes in parents and offsprings of a particular species remains constant due to

(a) doubling of chromosomes after zygote formation
(b) halving of chromosomes during gamete formation
(c) doubling of chromosomes after gamete formation
(d) halving of chromosomes after gamete formation

Ans. (b) halving of chromosomes during gamete formation

9. In Rhizopus, tubular thread-like structures bearing sporangia at their tips are called

(a) filaments (b) hyphae
(c) rhizoids (d) roots

Ans. (b) hyphae

10. Vegetative propagation refers to formation of new plants from

(a) stem, roots and flowers

(b) stem, roots and leaves
(c) stem, flowers and fruits
(d) stem, leaves and flowers

Ans. (b) stem, roots and leaves

11. Factors responsible for the rapid spread of bread mould on slices of bread are

(i) large number of spores
(ii) availability of moisture and nutrients in bread
(iii) presence of tubular branched hyphae
(iv) formation of round shaped sporangia
(a) (i) and (iii) (b) (ii) and (iv)
(c) (i) and (ii) (d) (iii) and (iv)

Ans. (c) (i) and (ii)

12. Length of pollen tube depends on the distance between

(a) pollen grain and upper surface of stigma
(b) pollen grain on upper surface of stigma and ovule
(c) pollen grain in anther and upper surface of stigma
(d) upper surface of stigma and lower part of style

Ans. (b) pollen grain on upper surface of stigma and ovule

13. Which of the following statements are true for flowers ?

(i) Flowers are always bisexual
(ii) They are the sexual reproductive organs
(iii) They are produced in all groups of plants
(iv) After fertilisation they give rise to fruits
(a) (i) and (iv) (b) (ii) and (iii)
(c) (i) and (iii) (d) (ii) and (iv)

Ans. (d) (ii) and (iv)

14. Which among the following statements are true for unisexual flowers ?

(i) They possess both stamen and pistil
(ii) They possess either stamen or pistil
(iii) They exhibit cross pollination
(iv) Unisexually flowers possessing only stamens cannot produce fruits
(a) (i) and (iv) (b) (ii), (iii) and (iv)
(c) (iii) and (iv) (d) (i), (iii) and (iv)

Ans. (b) (ii), (iii) and (iv)

15. Which among the following statements are true for sexual reproduction in flowering plants ?

(i) It requires two types of gametes
(ii) Fertilisation is a compulsory event
(iii) It always results in formation of zygote
(iv) Offsprings formed are clones
(a) (i) and (iv) (b) (i), (ii) and (iv)
(c) (i), (ii) and (iii) (d) (i), (iii) and (iv)

Ans. (c) (i), (ii) and (iii)

16. Offspring formed as a result of sexual reproduction exhibits more variations because

(a) sexual reproduction is a lengthy process
(b) genetic material comes from two parents of the same species
(c) genetic material comes from two parents of different species

(d) genetic material comes from many parents

Ans. (b) genetic material comes from two parents of the same species

17. Reproduction is essential for living organisms in order to

(a) keep the individual organism alive
(b) fulfil their energy requirement
(c) maintain growth
(d) continue the species generation after generation

Ans. (d) continue the species generation after generation

18. During adolescence, several changes occur in the human body. Mark one change associated with sexual maturation in boys.

(a) loss of milk teeth
(b) increase in height
(c) cracking of voice
(d) weight gain

Ans. (c) cracking of voice

19. In human females, an event that reflects onset of reproductive phase is

(a) growth of body
(b) change in hair pattern
(c) change in voice
(d) menstruation

Ans. (d) menstruation

20. In human males, the testes lie in the scrotum, because it helps in the

(a) process of mating
(b) formation of sperm
(c) easy transfer of gametes
(d) all the above.

Ans. (b) formation of sperm.

21. Asexual reproduction takes place through budding in

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

Ans. (b) Yeast

22. Vegetative propagation in potato takes place through

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

Ans. (a) Stem

23. The anther contains

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

Ans. (d) Pollen grains

24. Union of male and female gametes forms

(a) Egg (b) Zygote
(c) Embryo (d) Pollen grains

Ans. (b) Zygote

25. 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

26. Following disease is transmitted sexually.

(a) Malaria (b) Jaundice
(c) Elephantiasis (d) Syphilis

Ans. (d) Syphilis

27. Rose plant can be cultivated by

(a) Layering (b) Seeds
(c) Grafting (d) All of these

Ans. (c) Grafting

28. Following is a contraceptive.

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

Ans. (d) All of these

29. Fruit is formed from

(a) stamen (b) stigma
(c) ovary (d) ovule

Ans. (c) ovary.

30. If the ovum is not fertilized, following event will occur.

(a) Ovulation (b) Menstruation
(c) Pregnancy (d) All of these

Ans. (b) Menstruation.