Assignments in Science Class X

Topic: - HOW DO ORGANISMS REPRODUCE

IMPORTANT NOTES

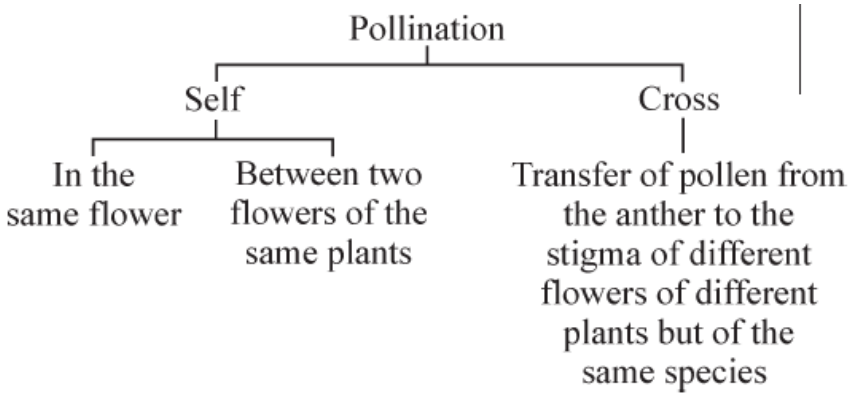
1. In asexual reproduction, certain body cells undergo repeated mitotic divisions and give rise to two or more new organisms of the same kind.
2. Different methods of asexual reproduction are — fission, budding, fragmentation, spore formation, regeneration, vegetative propagation, parthenogenesis and tissue culture.
3. **Fission** is a process of division of a single celled organism into two or many cells (called binary and multiple fission respectively), e.g., *Amoeba.*
4. **Budding** is a method of reproduction in which a protuberance develops on the mother organism's body, attains full maturity and then detaches, e.g., Yeast or *Hydra.*
5. **Spore formation:** Spores are the special cells formed within special structures called 'sporangia' that disseminate and can form the entire plant. This is exclusive to the plant kingdom, e.g., mushroom/ferns/mosses.
6. **Vegetative propagation** is a method of reproduction in which a vegetative plant part (i.e., a non-reproductive part or a nonflowering part) produces a new plant.

Vegetative part	Example
1. Leaf	*Bryophyllum*/Kalanchoe
2. Root	Mint/Seasam
3. Stem	Rose/Mango
4. Vegetative buds called bulbil	Agave

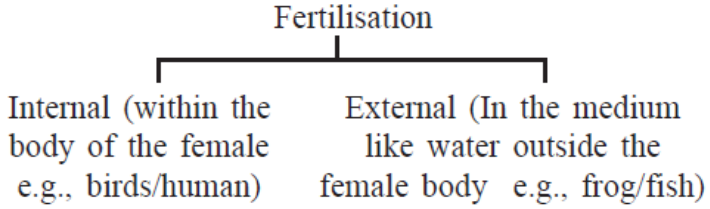
7. For artificial propagation by man, the commonly used methods are:
    1. **Cutting** in which a stem is given an oblique cut and the cut stem is kept under appropriate conditions to give rise to an entirely new plant, e.g., Rose / China rose.
    2. **Layering** is a process in which the stem, while still attached to the mother plant is buried under the soil for a while, till it strikes new roots. It is then detached from the mother plant, e.g., Jasmine. This is called 'soil layering'. The other form of layering is 'air layering' in which incision is made on the bark of a tree and covered with moist soil. When rooting takes place in the cut portion, the entire portion is cut and used for propagation.
    3. **Grafting** is a process in which two parts of different plants are joined by bandaging them tightly. This allows cambial activity to unite the two portions. The one that contributes the root is called 'stock' and the one that contributes the shoot is known as 'scion'. Bicoloured roses/different varieties of mangoes are made by this method.

8. **Advantages of Vegetative Propagation**
    1. It allows quicker and easy propagation.
    2. Better qualities of the plants can be maintained and the quality can even be enhanced as in seedless oranges.
    3. It results in propagation of those plants which do not produce viable seeds or produce seeds with prolonged period of dormancy.
9. **Disadvantages of Vegetative Propagation** Most of these propagated plants do not produce viable seeds and hence curtail natural reproduction.
10. **Regeneration** is the ability of an organism to replace or repair any lost part. Sometimes, an entire organism can be made from its fragmented body, e.g., *Planaria*. When an unfertilised egg can be made to develop into an entire organism, it is known as 'Parthenogenesis' in animals and 'Parthenocarpy' in plants.
11. The reproductive part of a plant is its flower. A complete flower has four whorls —sepals, petals, androecium and gynoecium.
12. Male gametes are the pollen grains produced by the anther lobes and the female gametes are the ova within ovules present inside ovaries.

13. The transfer of pollen grains from the anther to the stigma is known as pollination.



14. After pollination, pollens get deposited on the stigma. The pollen germinates by forming pollen tubes. Each tube carries two male nuclei at its tip.
15. The ovary bears ovules. The number of ovules vary from one (as in mango) to many (as in orchid). Each ovule contains an embryo sac which has a haploid egg and two other haploid nuclei which fuse to form a **polar nucleus**.
16. During syngamy, the first male nucleus fuses with the ovum to form the zygote. The second male nucleus fuses with the polar nucleus to form the **endosperm.**
17. The entire process is summarised as "double fertilisation" and 'triple fusion'. The fertilized ovule develops into a seed and the fertilized ovary into a fruit.
18. In most animals single individual produces only one type of gametes and hence is unisexual. However, there are organisms that possess both testicles and ovaries and are called bisexuals or hermaphrodites, e.g., earthworm and leech.
19. The fusion of the two gametes is known as 'fertilisation':



20. **Male reproductive system** in human consists of the following organs —
    (i) Testes in the scrotum

(ii) Epididymis
(iii) Vas deferens
(iv) Urethra
(v) Penis
(vi) Accessory glands (seminal vesicle and prostate gland)

21. **Female reproductive system** in humans consists of the following organs —
    1. Ovaries
    2. Fallopian tubes or oviducts
    3. Uterus or womb
    4. Vagina
22. The gonads control and regulate three major functions :
    1. Produce the gametes as well as the sex hormones (testosterone is produced by the testicles and estrogen and progesterone by the ovaries).
    2. They help in the functioning of the accessory sex organs (i.e., organs which are a part of the reproductive system but do not directly produce gametes).
    3. They help in the development of secondary sex characters like breast development in girls and growth of facial hair in boys.
23. In male the testicles are lodged in the scrotum outside the body as the process of sperm formation requires a temperature lower than the normal body temperature. The other parts of this system are :
    1. Vas deferens
    2. Urethra is a common passage for the release of urine as well as sperms. Testicles function throughout the life of a man, from puberty onwards, though the quality of the sperms declines with age.
24. The attainment of sexual maturity is known as puberty. The female puberty is considered to be attained with the first menstrual discharge and this is called 'Menarche'. The stoppage of menstruation marks the end of the reproductive life in females and is known as 'Menopause'.
25. Population control involves measures by which fertilisation is prevented. The three common methods are :
    1. Physical barrier methods like condoms or placing of IUCDs (Intra Uterine Contraceptive Devices) in the uterus of the female.
    2. Chemical methods like use of oral or vaginal pills.
    3. Surgical methods which involves a surgery in which the tubes conducting the gametes are cut and tied. It is known as vasectomy in males and tubectomy in females.
26. STDs are sexually transmitted diseases, also called venereal diseases (VDs). They are transmitted from the infected individuals to healthy ones during sexual contacts. Gonorrhea and syphilis are common STDs. AIDS (Acquired Immuno Deficiency Syndrome) is also transmitted by sexual contact. Responsible sexual behavior and prudence can help to prevent the spread of STDs. Both government (National Population Policy and National Health Policy) and nongovernment organisations are endeavoring to control the fertility rate.

VERY SHORT ANSWER QUESTIONS
IMPORTANT QUESTIONS

1. What is a spore?
2. Name two plants which reproduce through spores.
3. Why is regeneration considered a method of reproduction?
4. Which vegetative part is used in the propagation of bryophyllum and mint?
5. Name two types of layering.

6. Which technique would you use for propagating improved varieties of mango and rose?
7. Mention one physiological advantage of grafting quality roses on wild rose stock.
8. Give two examples of organisms, which can regenerate from small part of their body.
9. Name the plant whose intact leaves produce plantlets along the margin.
10. What is the main difference between stem cutting and layering?
11. Which process results in zygote?
12. Which parts of the flower transform into the seed and fruit?
13. Which group of plants shows double fertilisation?
14. What is the function of pollen grains in flowers?
15. Where is the zygote located in the flower after fertilisation?
16. What are gonads?
17. What is external fertilisation?
18. What is internal fertilisation?
19. What is semen?
20. Where are the ova produced in woman?
21. What are oral contraceptives?
22. What is epididymis? What is the function of epididymis?
23. What are the functions of urethra?
24. What are the secondary sexual characters in human male?
25. When does puberty occur in human male and female?

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. Name the type of fission carried out by *Amoeba*.
2. Why is DNA copying an essential part of the process of reproduction?
3. What is the effect of DNA copying which is not perfectly accurate on the reproduction process?
4. Write the expanded form of AIDS.
5. List two functions performed by ovaries in a human female.
6. Write the full form of IUCD.
7. Write the full expansion of HIV.
8. Name any two sexually transmitted diseases.
9. List the general characteristics of the pollen grains of wind-pollinated plants.

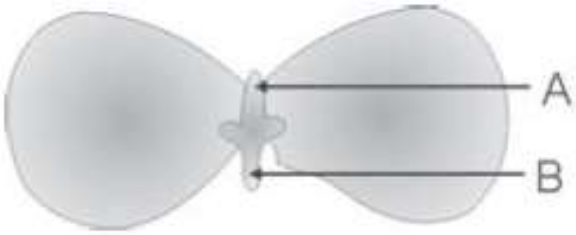
SHORT ANSWER QUESTIONS
IMPORTANT QUESTIONS

1. Suggest two advantages of asexual reproduction.
2. When and how does multiple fission take place?
3. Some crop plants can be grown from a seed as well as vegetatively from stem cutting. List any four advantages of vegetative propagation in such cases.
4. "Grafting is a common method of obtaining a superior plant from two different plants". Explain.
5. Colonies of yeast fail to multiply in water, but multiply in sugar solution. Give one reason for this.
6. Can you consider cell division as a type of reproduction in unicellular organism? Give one reason?
7. Why does bread mould grow profusely on a moist slice of bread rather than on a dry slice of bread?
8. Draw a diagram of longitudinal section of a pistil showing pollen germination and label the following parts.
(i) style (ii) pollen tube
9. What are the advantages of tissue culture?
10. In tobacco plant, the male gametes have twenty-four chromosomes. What is the number of chromosomes in the female gamete? What is the number of chromosomes in the zygote?

11. Why cannot fertilisation take place in flowers if pollination does not occur?
12. Give two reasons for the appearance of variations among the progeny formed by sexual reproduction.
13. In a bisexual flower inspite of the young stamens being removed artificially, the flower produces fruit. Provide a suitable explanation for the above situation.
14. What are the changes seen in girls at the time of puberty?
15. What changes are observed in the uterus if fertilisation does not occur?
16. What are the benefits of using mechanical barriers during sexual act?
17. Explain how, offspring and parents of organisms reproducing sexually have the same number of chromosomes?

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. What is placenta? State it's any two roles during pregnancy.
2. State in brief any two functions of copper-T used by some women.
3. In what respect is the human male gamete different from the female gamete?
4. What will happen when?
(a) A mature *Spirogyra* filament attains considerable length? (b) *Planaria* gets cut into two pieces?
5. (a) Give reason : Regeneration is not the same as Reproduction.
(b) State the mode of a sexual reproduction in *Plasmodium*
6. State in brief the role of the prostate gland and seminal vesicles in the male reproductive system?
7. Name the type of asexual reproduction in:
(a) *Planaria* (b) *Rhizopus* (c) *Spirogyra* (d) *Hydra*
8. (a) Surgical methods can be used to create a block in the reproductive system for contraceptive purposes. Name such parts where blocks are created in:
(i) Males (ii) Females
(b) State any two reasons for using contraceptive devices.
9. (a) What is vegetative propagation?
(b) Write any two advantages of practicing this method.
10. How does the process of budding differ from the process of spore formation?
11. (a) Out of the following plants which two plants are reproduced by vegetative propagation? Jasmine, wheat, mustard, banana
(b) List any one advantage of practicing this kind of propagation.
12. List any two reasons for adopting contraceptive methods.
13. (a) Why do testes located in scrotum outside the abdominal cavity?
(b) What will happen to ovary and ovule after fertilization in angiospermic plants?
14. (a) Name two animals which reproduce asexually?
(b) What are the male and female gonads in human beings known as?
15. State the significance of human testis being located in the scrotum?
16. The organisms formed by asexual reproduction are considered as clones. Why? State the advantage of sexual reproduction over asexual reproduction.
17. (a) What is the site of implantation and development of young one in human female?
(b) Mention two advantages of using mechanical barriers during sexual act.
18. (a) Leaves of *Bryophyllum* fallen on the ground produce new plants whereas the leaves of jasmine do not. Why?
(b) Write two points of differences between asexual and sexual reproduction.
19. In a bisexual flower in spite of the young stamens being removed artificially, the flower produces fruit. Give reasons.
(a) Name the parts of the flower which ripens to form fruit and seed? (b) In the following diagram label A and B.



20. With the help of a diagram only show regeneration in *Planaria*. Regeneration is not possible in all types of animals. Why?
21. How does the process of seed germination take place in plants? Describe in brief.
22. How do sexual and asexual reproductions lead to speciation? Give one point for each.
23. Name the sex hormones secreted by male and female sex organs in human beings. State one function of each.
24. State the mode of reproduction in following organisms: Earthworm, Frog, *Rhizopus*, *and Plasmodium*.
25. What are sexually transmitted diseases? Name an STD which damages the immune system of human body?
26. What is reproduction? What are its two types? Which one of the two confers new characteristics of the offspring and how?
27. What is binary fission? Draw a diagram to show binary fission in *Amoeba*.
28. What is regeneration? State a reason why a more complex organism cannot give rise to new individuals through this method.
29. Name the male and female gametes in animals. What is fertilisation and where does it take place in human females?
30. Name one sexually transmitted disease each caused due to bacterial infection and viral infection. How can these be prevented?
31. Name any two sexually transmitted diseases. What advice is given to prevent them?
32. What methods will you use for growing jasmine and rose plant?
33. Describe how the sex of the offspring is determined in the zygote in human beings.

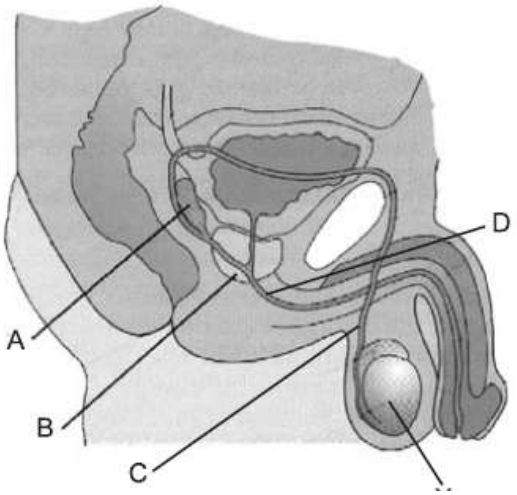
SHORT ANSWER QUESTIONS
IMPORTANT QUESTIONS

1. Differentiate between binary fission and multiple fission.
2. Can an unfertilised egg form a new organism in the sexually reproducing type of organism? Describe the two terms associated with the same.
3. Justify that parthenogenesis is not the same as asexual reproduction.
4. What criteria and precautions should be taken into consideration while selecting stock and scion?
5. With the help of a neat sketch illustrate any three natural methods of vegetative propagation.
6. Only through labelled diagrammatic representation, represent the process of budding as seen in *Hydra*.
7. How are general growth and sexual maturation different from each other?
8. Draw a diagram to illustrate fertilisation in a flowering plant and label the following on it
(a) Pollen grains (b) Egg
9. Draw a labelled diagram of the longitudinal section of a flower.
10. Mention the important post-fertilisation changes in a flower.
11. What is a seed? How does it help in reproduction in plants? **[HOTS]**
12. What are the advantages of sexual reproduction over asexual reproduction?
13. If a woman is using a copper-T, will it help in protecting her from sexually transmitted diseases? **[HOTS]**
14. How are the modes of reproduction different in unicellular and multicellular organisms?
15. Mention the methods used for regulation of child birth.

16. Describe the surgical method of birth control.
17. Differentiate between menarche and menopause.
18. Why is it said that "sexual reproduction promotes diversity of characters in the offsprings"? **[HOTS]**
19. What would be the ratio of chromosome number between an egg and its zygote? How is the sperm genetically different from the egg?

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. In a sexually reproducing plant, what happens to zygote formed after fertilization? State in brief.
2. State in brief the function of the following organs in the human female reproductive system:
(a) Ovary (b) Fallopian tube (c) Uterus
3. (a) Identify the asexual method of reproduction in each of the following organisms :
(i) rose (ii) yeast (iii) planaria
(b) What is fragmentation? Name a multicellular organism which reproduces by this method.
4. State the role of father and mother in the determination of sex of new born child. Support your answer with a suitable illustration.
5. (a) How many eggs are produced every month by either of the ovaries in a human female? Where does fertilization take place in the female reproductive system?
(b) What happens in case the eggs released by the ovary are not fertilized?
6. (a) Draw a neat diagram of longitudinal section of an ovule to show fertilization of pollen on stigma and label the following parts:
(i) Pollen Tube
(ii) Stigma
(iii) Ovary
(iv) Female germ cell
(b) Give any two advantages of vegetative propagation.
7. In the diagram of human male reproductive system given below:

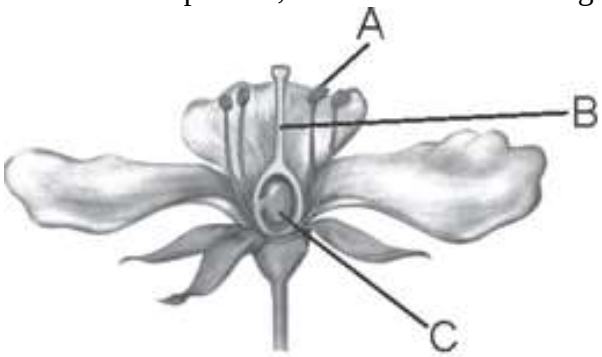


(a) Label parts A and B.
(b) Name the hormone produced by organ 'X'. What is the role of this hormone in the human male?
(c) Mention the name of substances that are transported by tubes
(i) C (ii) D
8. Differentiate between:
(a) Asexual and sexual reproduction.
(b) Plumule and Radicle
(c) Pollination and Fertilization

9. (a) Why is vegetative propagation practiced for growing some types of plants?
(b) Name the different parts of a flower that has germ cells. (c) List any two agents of pollination.

10. (a) What is the difference between self-pollination and cross pollination?
(b) What happens to the pollen which falls on a suitable stigma? Explain.

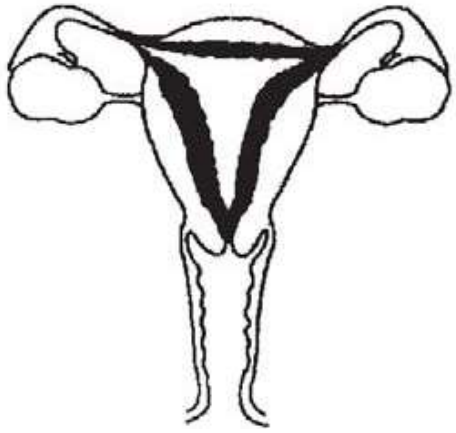
11. Name the parts A, B and C shown in the given diagram and state one function of each part.



12. State one function of each of the following parts of human male reproductive system.
(i) Vas deferens
(ii) Testis
(iii) Prostate gland

13. (a) Name an organism in which binary fission occurs in a definite orientation.
(b) Draw a neat diagram of a germinating seed and label on it the following: Cotyledon, Plumule, Radicle

14. (a) Name the parts 1 to 5 of human female reproductive system.
(b) Name the part in which fertilization takes place in the system.



15. (a) How do the oral pills function as contraceptives?
(b) The use of these pills may be harmful. Why?

16. List and describe in brief any three ways devised to avoid pregnancy.

17. (a) Draw a neat diagram of female reproductive system in human being and label on it :
(i) the part which secretes ova.
(ii) the part where implantation takes place.
(b) What happens if the fallopian tube is blocked?

18. Study the given data and answer the questions that follow :

1	2	3
Parental plant cross fertilized and seeds collected	F_1 Generation offspring	F_2 Generation offspring after self pollination of F_1 hybrid
Male parent - Round Green seeds Female parent - Wrinked Yellow seeds	All seeds - Round Yellow	314- Round Yellow 110- Round Green 102- Wrinkled Yellow 32- Wrinkled Green

(a) What is the term given to this type of cross?

(b) What does the data in column 2 indicates? State how you arrived at this conclusion.

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

20. Illustrate the following with the help of suitable diagrams:
(i) Binary fission in *Amoeba*
(ii) Leaf of *Bryophyllum* with buds.

21. Illustrate the following with the help of suitable diagrams:
(i) Spore formation in *Rhizopus*.
(ii) Multiple fission in *Plasmodium*.

22. Differentiate between 'self-pollination' and 'cross-pollination'. Describe 'double fertilisation' in plants.

23. (i) What is fertilisation? Distinguish between external fertilisation and internal fertilisation.
(ii) What is the site of fertilisation in human beings?

24. Define the terms unisexual and bisexual giving one example of each.

25. What is vegetative propagation? When is it used? Name three methods of vegetative propagation.

26. (i) Which are the two main types of reproduction in living organisms?
(ii) Classify the following under these two types: *Amoeba*, Frog, Earthworm and Yeast.

27. What are the male and female gonads in human beings? State any two functions of each of them.

28. Define any three of the following terms used in relation to human reproduction:
(i) Fertilisation
(ii) Implantation
(iii) Placenta
(iv) Gestation
(v) Parturition

29. (i) When does ovulation occur during the menstrual cycle in a normal healthy female?
(ii) Draw a labelled diagram to show the reproductive system of a human female.

30. Name any two Sexually Transmitted Diseases (STDs). How do these infectious diseases spread from one person to another? Give two symptoms of STDs.

31. Draw a diagram of a flower to show its male and female reproductive parts. Label on it:
(a) The ovary
(b) The anther
(c) The filament
(d) The stigma

LONG ANSWER QUESTIONS

IMPORTANT QUESTIONS

1. Define the term layering. What are its two types? How is one different from the other?

2. Tabulate the process of reproduction into its various types, giving one example of each type.

3. How are ornamental plants grown artificially?

4. With a set of suitable diagrams, describe the process of budding as seen in yeast.

5. Reproduction is essentially a phenomenon that is not for survival of an individual but for the stability of a species. Justify.

6. Draw and write about the structure of an ovule.

7. Explain double fertilisation with the help of a diagram.

8. How is tissue culture technique performed? In which area this technique is finding its application?

9. Why does menstruation occur?

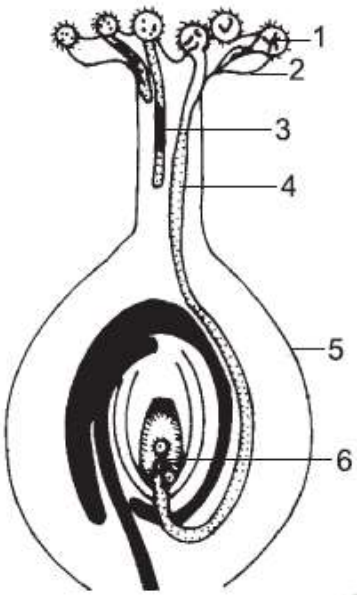
10. What are the factors responsible for the sharp increase in population?

11. What do you know about reproductive health of human beings?

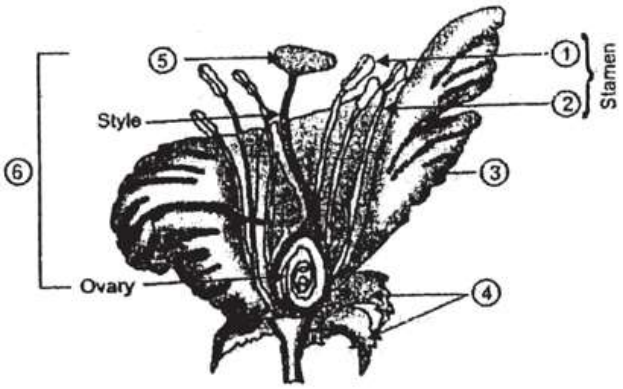
12. With the help of a diagram, describe how fertilisation takes place in female reproductive system.
13. Distinguish between a gamete and zygote.
Explain their roles in sexual reproduction.

QUESTIONS FROM CBSE EXAMINATION PAPERS

1. (a) What is the role of seminal vesicles and the prostate gland?
(b) What are the three categories of contraception methods? Write briefly about each.
2. (a) Draw longitudinal section of a flower and label on it the following:
(i) Ovary (ii) Style
(iii) Stigma (iv) Anther
Why is vegetative propagation practised for growing some plants? Give two examples of plants grown by this method.
3. (a) In the given figure name the parts marked 1 to 6:



(b) Differentiate between Pollination and Fertilization.
4. (a) In the given figure name the parts marked 1 to 6 :



(b) Differentiate between self-pollination and cross pollination.
5. (a) Differentiate between pollen grain and ovule.
(b) State in brief functions of the following parts of the human female reproductive system.
(i) Ovary (ii) Fallopian Tube (iii) Uterus
6. (a) Differentiate between germination and fertilization.
(b) State in brief the functions of the following parts of the human male reproductive system:
(i) Scrotum (ii) Testes (iii) Vas deferens

7. (a) Draw a neat diagram of the reproductive system of a human female and label on it the following :
(i) Reproductive part that produces the female hormone
(ii) Site of fertilization
(iii) organ where growth and development of the embryo takes place.
(b) How does the growing embryo meet with its nutritional requirements?
(c) What happens if the ovum is not fertilized?
(d) Mention a contraceptive method that can be used by the human female.

8. (a) Name the female reproductive part of a flower. Draw diagram of its longitudinal section depicting the process of fertilization of pollen on stigma and label on it the following:
(i) Male germ cell
(ii) Female germ cell
(iii) Ovary
(b) What happens to the following parts after fertilization?
(i) ovum
(ii) ovary
(iii) ovule
(iv) sepals and petals

9. (a) Draw a neat labelled diagram of pistil showing fertilization of pollen on stigma.
(b) Give the functions of:
(i) stigma (ii) ovary
(c) State in brief the formation of seed in a flower.

10. (a) State any two changes seen in girls at the time of puberty.
(b) How does the embryo get nourishment inside the mother's body? State in brief.
(c) List any two commonly adopted, contraceptive methods.

11. Draw a neat diagram of the human male reproductive system and label the parts performing the following function:
(a) Production of sperms
(b) Gland which provides fluid
(c) Provides low temperature for the formation of sperms
(d) Common passage for sperms and urine Name a sexually transmitted disease and a method to avoid it.

12. (a) State any two changes seen in boys at the time of puberty?
(b) Define fertilization and implantation.
(c) State the role of ovary and fallopian tube in human body.

13. (a) What is placenta? Mention its role during pregnancy.
(b) What will happen if the egg is not fertilized?
(c) Collection of yeast fails to multiply in water, but multiply in sugar solution. Give one reason for this.

14. (a) What is vegetative propagation? How is it advantageous? Give suitable example.
(b) How will an organism be benefited if it reproduces through spores?
(c) How is regeneration different from fragmentation?

15. (a) Draw a diagram showing fertilisation in a flowering plant and label—stigma, male germ cell, pollen grain, egg.
(b) List two advantages of vegetative propagation.

16. (a) Name a plant in which vegetative propagation takes place by leaves.
(b) Write the causal organism of the following diseases.
(i) Warts
(ii) Syphilis
(c) Draw a neat diagram of reproductive system of human female and label the following parts:
(i) The part which is responsible for providing shelter to the growing embryo.
(ii) The part where fertilization takes place.

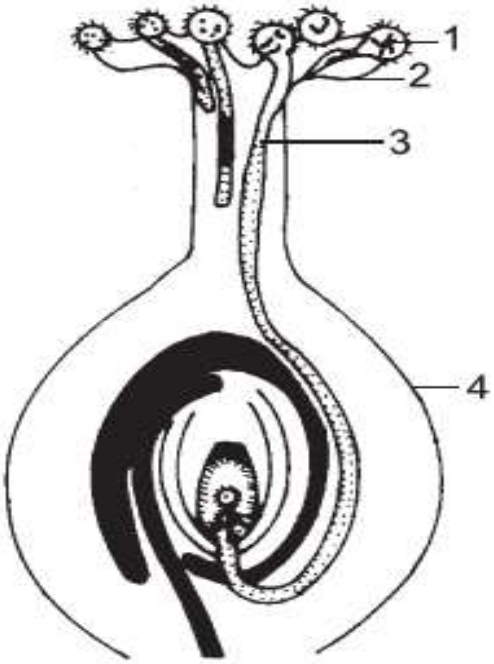
(iii) The part in which ovum formation takes place.
(iv) The part which is ligated to avoid fertilization.

17. (a) Which device prevents implantation by irritating the lining of uterus?
(b) What could be the possible reason for declining female to male sex ratio in our country? Suggest two measures to achieve 1:1 ratio.

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

18. (a) List two reasons for the appearance of variations among the progeny formed by sexual reproduction.

(b) (i) Name the parts marked "1" and "2" in the following diagram.
(ii) How does 1 reach on the 2?
(iii) What happens to the part marked 4 after fertilization is over?
(iv) Mention the importance of the part "3".



19. (a) Which part of the *Bryophyllum* develops into a new plant?
(b) List two basic differences between male and female germ cells?
(c) State two functions performed by testis in human male.

20. (a) Draw the diagram of a flower to show its male and female reproductive parts. Label the following parts in it :
(i) Ovary (ii) Anther (iii) Filament (iv) Stigma
(b) How does fusion of male and female gametes take place in plants?

21. What is placenta? Describe its structure. State its function in case of pregnant human female.

22. Draw a neat diagram of human male reproductive system and label on it the following parts:
(i) Prostate gland
(ii) Seminal vesicle
(iii) Testis State the function of testis.

23. (a) Draw a neat diagram to show fertilization in a flower and label on it the following parts:
(i) Stigma
(ii) Pollen tube
(iii) Ovary
State the function of pollen tube.

(b) List in tabular form any two differences between a male gamete and a female gamete.

24. (a) With the help of diagram show asexual reproduction in *Rhizopus*.

(b) How is this method advantageous for *Rhizopus*?

(c) How is mode of reproduction in unicellular organisms differ from multicellular organisms?

25. (a) State two advantages of vegetative propagation. Name two plants in which it is practiced.

(b) How does Hydra reproduce? Explain in brief with the help of a labelled diagram.

26. (a) Mention the role of following organs of human male reproductive system.

(i) Testis

(ii) Scrotum

(iii) Vas deference

(iv) Prostate glands

(b) State the reason why testes are located outside the abdominal cavity.

27. (a) Why do multicellular organisms, need to use more complex ways of reproduction?

(b) What is the advantage of reproducing through spores?

(c) How does variation lead to the survival of species overtime?

(d) Is fertilization possible without pollination?

(e) Mention any one difference between self and cross pollination.

28. (a) Draw a diagram showing germination of pollen on stigma of a flower.

(b) Label pollen grain, male germ-cells, pollen tube and female germ-cell in the above diagram.

(c) How is zygote formed?

29. (a) Explain the role of placenta in the development of human embryo.

(b) Give example of two bacterial and two viral sexually transmitted diseases. Name the most effective contraceptive which prevents spread of such diseases.

30. (a) Draw a diagram illustrating fertilization in a flowering plant and label on it : Pollen grain, Male germ cell, Female germ cell, Stigma.

(b) Describe the process of fertilisation in plants.

31. Give two reasons for avoiding frequent pregnancies of women. Explain the following methods of contraception giving one example of each:

(i) Barrier method

(ii) Chemical method

(iii) Surgical method