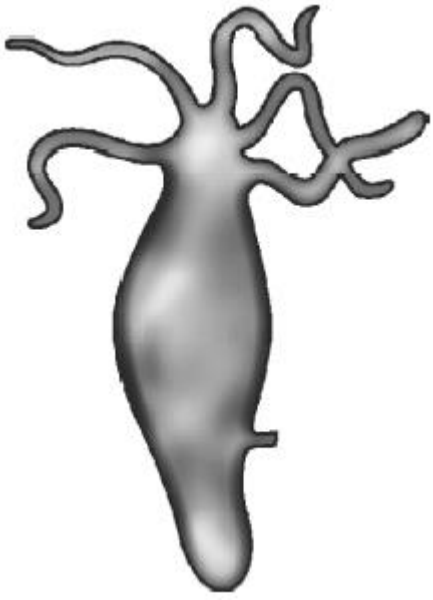
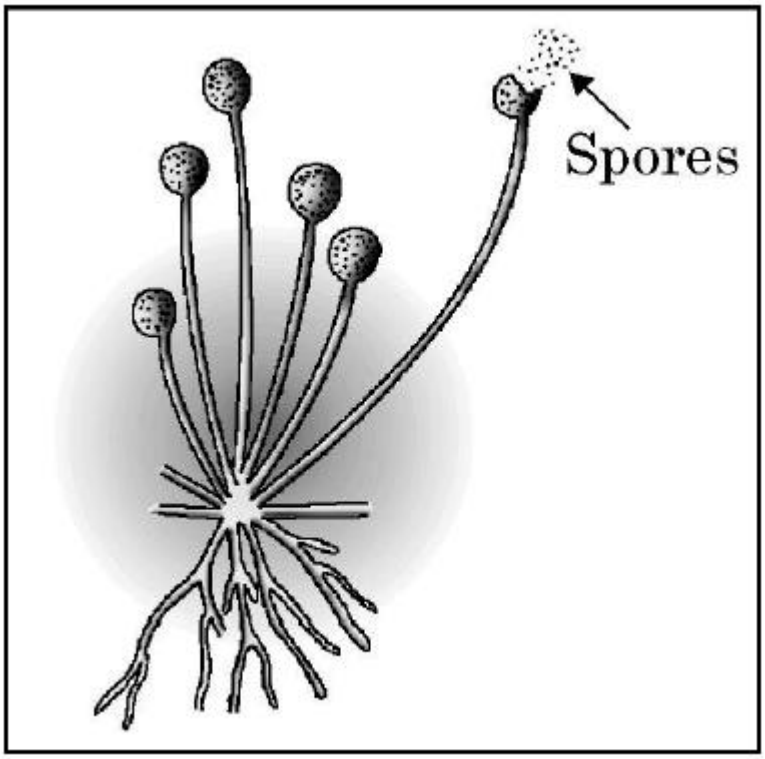
Year 2024

Multiple Choice Questions [1 Mark]

1) In which of the following organisms, multiple fission is a means of asexual reproduction ? **[(31/1/1); (31/1/2); (31/3/3)]**
   (a) Yeast (b) Leishmania (c) Paramoecium (d) Plasmodium
2) Consider the following statements : **[(31/1/1); (31/3/3)]**
   (i) The sex of a child is determined by what it inherits from the mother.
   (ii) The sex of a child is determined by what it inherits from the father.
   (iii) The probability of having a male child is more than that of a female child.
   (iv) The sex of a child is determined at the time of fertilisation when male and female gametes fuse to form a zygote.
   The correct statements are :
   (a) (i) and (iii)
   (b) (ii) and (iv)
   (c) (iii) and (iv)
   (d) (i), (iii) and (iv)
3) Which one of the following organ is NOT a part of human female reproductive system ?**[(31/1/3)]**
   (a) Ovary (b) Uterus (c) Vas deferens (d) Fallopian tube
4) Identify the mode of asexual reproduction in the following organism : **[(31/2/1)]**

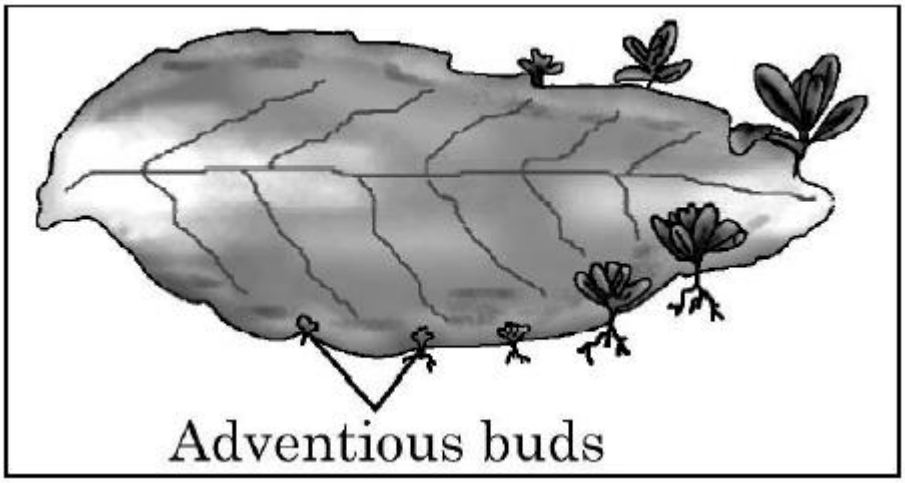


   (a) Fragmentation (b) Multiple fission (c) Budding (d) Binary fission
5) Which one of the following organism is represented by this diagram ? **[(31/2/2)]**



(a) Spirogyra (b) Planaria (c) Yeast (d) Rhizopus

6) In the given diagram the leaf shown belongs to which plant ? **[(31/2/3)]**



(a) Hibiscus (b) Money plant (c) Mustard (d) Bryophyllum

7) Part(s) of a flower which attracts insects for pollination is (are) **[(31/3/1)]**
(a) petals and Sepals (b) anther and Stigma (c) petals only (d) sepals only

8) Which one of the following statements is TRUE for Hydra, Amoeba and Spirogyra ? **[(31/3/2)]**
(a) They are multicellular. (b) They are unicellular. (c) They reproduce sexually. (d) They reproduce asexually.

9) Part(s) of a flower which attracts insects for pollination is (are) **[(31/3/2)]**
(a) petals and Sepals (b) anther and Stigma (c) petals only (d) sepals only

10) Offsprings formed as a result of sexual reproduction produce more variations because **[(31/3/3)]**

(a) genetic material is contributed by many parents.
(b) sexual reproduction is a lengthy process.
(c) genetic material is contributed by two individuals of same species to produce a new generation.
(d) DNA copying is not accompanied by the creation of cellular apparatus.

11) Sex determination depends upon the environment in **[(31/3/3)]**
(a) Birds (b) Amphibians (c) Reptiles (d) Fishes

12) The plants that can be raised by the method of vegetative propagation are : **[(31/4/1); (31/4/2)]**
(a) Sugarcane, roses, grapes
(b) Sugarcane, mustard, potato
(c) Banana, orange, mustard
(d) Papaya, mustard, potato

13) The part of seed which is a source of food during germination of seed is : **[(31/4/1); (31/4/2); (31/4/3)]**
(a) Cotyledon (b) Plumule (c) Radicle (d) Embryo

14) A zygote is formed by the fusion of a male gamete and a female gamete. The number of chromosomes in the zygote of a human is : **[(31/4/1); (31/4/2); (31/4/3)]**
(a) 23 (b) 44 (c) 46 (d) 92

15) The part of the flower which attracts insects for pollination is/are : **[(31/4/3)]**
(a) Stigma and style (b) Sepals and petals (c) Petals only (d) Sepals only

16)

Assertion and Reasoning [1 Mark]

These consist of two statements —Assertion(A) and Reason(R). Answer these questions selecting the appropriate option given below:
(a) Both Assertion(A) and Reason(R) are true and Reason(R) is the correct explanation of the Assertion(A).
(b)Both Assertion(A) and Reason(R) are true, but Reason(R) is not the correct explanation of the Assertion(A).
(c)Assertion(A) is true, but Reason(R) is false.
(d)Assertion(A) is false, but Reason(R) is true.

1) Assertion (A): Human female has a perfect pair of sex chromosome.**[(31/2/1); (31/2/2); (31/2/3)]**
Reason (R): Sex chromosome contributed by the human male in the zygote decides the sex of a child.

2) Assertion (A) : Offsprings produced by asexual reproduction are genetically similar to the parents.
Reason (R): Asexual reproduction involves a single parent. **[(31/3/1)] (31/3/3)]**

3) Assertion (A) : In human beings, males have 'XX' sex chromosomes and females have 'XY' sex chromosomes.
Reason (R) : Sex of the child is determined at the time of fertilization when male and female gamete fuse to form a zygote. **[(31/3/2)]**

4) Assertion (A) : Sex of the children will be determined by what they inherit from their mother.
Reason (R) : Women have XX sex chromosomes. **[(31/5/1); (31/5/2); (31/5/3)]**

5)

Very Short Answer Type Questions [2 Marks]

1) "Stability of DNA in a species is ensured during sexual reproduction."Justify the statement. **[(31/2/1)]**
2) Name two types of germ cells present in human beings. List two structural differences between the two. **[(31/2/2)]**
3) The survival of a species is promoted through creation of variations. Illustrate with an example. **[(31/4/1)]**
4) How is the sex of a newborn individual determined in different species of animals ? Give three examples to support your answer. **[(31/4/2)]**
5) Some unicellular organisms such as Plasmodium and Leishmania differ in the manner in which they reproduce. Name and explain the reproductive process taking place in them. **[(31/5/1)]**
6) Explain how the original number of chromosomes present in the parents are restored in the progeny. Name the cell division by which chromosome number is maintained in the progeny. **[(31/5/2)]**
7) Identify the organ in the human female reproductive system where the sperm encounters the egg cell. What will happen if it is blocked ? Name the technique by which it can be blocked. **[(31/5/3)]**
8)

Short Answer Type Questions [3 Marks]

1) Explain the events that take place once a sperm reaches the oviduct till it becomes a foetus. Write the role of placenta in pregnancy.**[(31/2/1)]**
2) (a) In angiosperms why fertilisation cannot take place in flowers if pollination does not take place ? Where is zygote located in a flower after fertilisation ? What does it develop into ?
   (b)Write the names of those parts of a flower which serve the same function as the following do in animals :
   (i) testis (ii) ovary **[(31/2/2)]**
3) (a) List any two contraceptive methods practised only by women. Mention how these methods work.
   (b) Write the two roles performed by testes in human males. **[(31/2/3)]**
4) Explain with the help of a labelled diagram, the process of reproduction in Hydra by budding. Name the cells used for reproduction in this process. **[(31/4/1); (31/4/2); (31/4/3)]**
5) List two roles of each of the following in human reproductive system :
   (i) Seminal vesicles and prostate gland
   (ii) Oviduct
   (iii) Testis **[(31/4/1); (31/4/2); (31/4/3)]**
6) The incorrect statement about placenta is : **[(31/5/1); (31/5/2); (31/5/3)]**
   (a) It is a disc embedded in the uterine wall.
   (b) It contains villi on the embroy's side of the tissue'
   (c) It has a very small surface area for glucose and oxygen to pass from mother to the embryo.
   (d) The embryo gets nutrition from the mother
7) Select from the following the conditions responsible for the rapid spread of bread mould on a slice of bread : **[(31/5/1); (31/5/2); (31/5/3)]**

(i) Formation of large number of spores
(ii) Presence of moisture and nutrients in bread
(iii) Low temperature
(iv) Presence of hyphae
(a) (i) and (ii) (b) (ii) and (iv) (c) (ii) and (iii) (d) (iii) and (iv)

8)

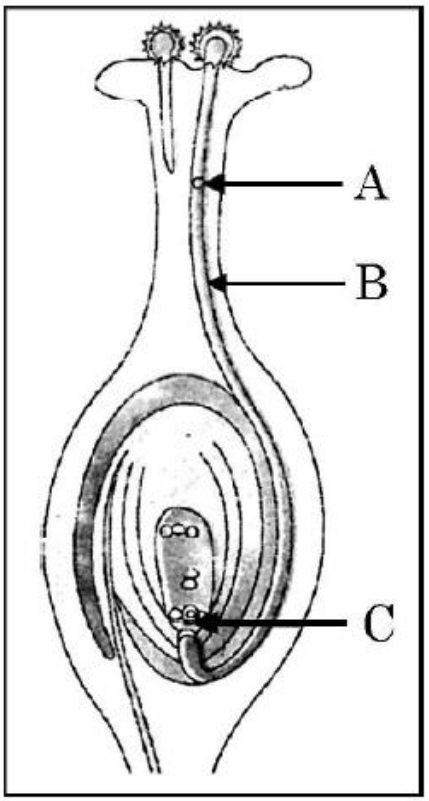
Long Answer Type Questions [5 Marks]

1) (i) Name three techniques/devices used by human females to avoid pregnancy. Mention the side effects caused by each.
(ii) What will happen if in a human female (a) fertilisation takes place, (b) an egg is not fertilised ? **[(31/1/1); (31/1/2); (31/1/3)]**

2) (i) Draw a diagram showing spore formation in Rhizopus and label the (a) reproductive and (b) non-reproductive parts. Why does Rhizopus not multiply on a dry slice of bread ?
(ii) Name and explain the process by which reproduction takes place in Hydra.**[(31/1/1); (31/1/2); (31/1/3)]**

3) (i) What are spores ? On which structures are they formed ? How do they overcome unfavourable conditions ? Name the organism which multiplies with the help of these structures.
(ii) Give two reasons why some plants are grown by the method of vegetative propagation. List two methods used to grow plants vegetatively. **[(31/3/1)]**

4) Study the diagram given below and name the parts marked as A, B and C. What happens when B reaches C in the ovary ?
Mention its significance.



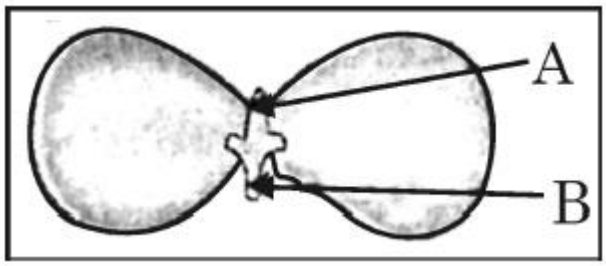
(ii) Write the post fertilisation changes that occur in a flower **[(31/3/1)]**.

5) (a) What is puberty ? Write any two changes that occur in boys during early teenage years.
(b) List two functions performed by testis in human males.
Mention one role each of (i) Vas deferens, (ii) Seminal Vesicle (ii) Urethra and (iv) Scrotum in human male reproductive system. **[(31/3/2)]**

6) (a) Write two functions each of the following parts in human female reproductive system :
(i) Ovary
(ii) Oviduct
(iii) Uterus
(b) Describe the structure and function of placenta. **[(31/3/2)]**

7) (a) Name any two sexually transmitted diseases.
(b) Prenatal sex determination is prohibited by law. Why ?
(c) Name any three methods of contraception stating one side-effect of each. **[(31/3/3)]**

8) (a) Name a unisexual and a bisexual flower.
(b) Define cross pollination. State how it is carried out.
(c) Observe the diagram given below and name the parts marked as 'A' and 'B'. 5

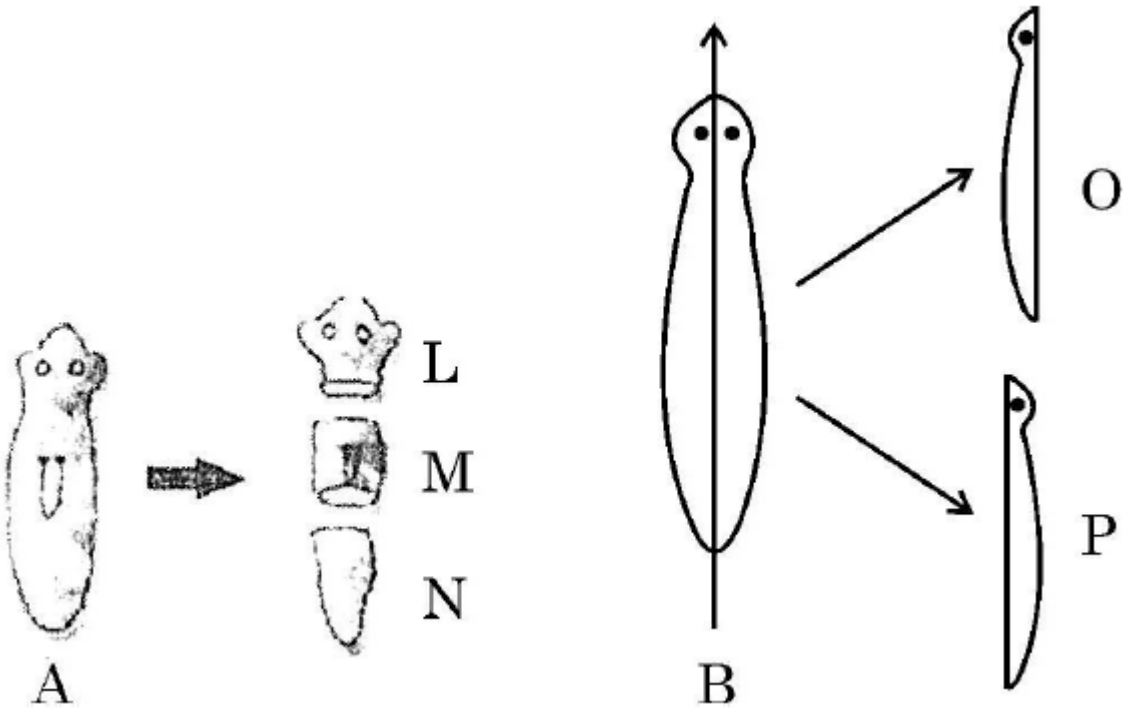


Mention the function of each of these parts. **[(31/3/3)]**

9)

Case Study [4 Marks]

1) Asexual reproduction involves a single parent to produce offsprings without the formation of gametes. It occurs by the following ways : Fission, Budding, Fragmentation, Spore formation and Regeneration. In one of the methods like regeneration, Planaria A is cut horizontally into three pieces — L, M and N and Planaria B is cut vertically into two equal halves — O and P.



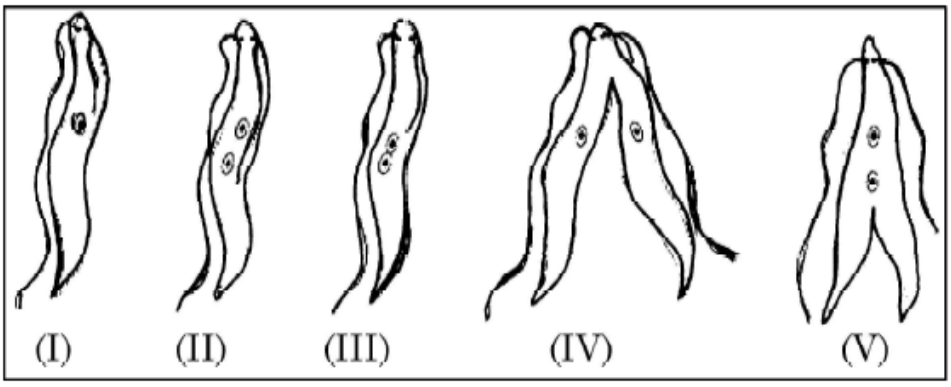
(a) Which of the cut pieces of the two Planaria could regenerate to forma complete organism ?
(b) Give an example of another organism which follows the same mode of reproduction as Planaria.
(c) What is the meaning of 'development' in regeneration ?
OR
(c) Differentiate between regeneration and fragmentation. **[(31/2/1); (31/2/2); (31/2/3)]**

2) Pollination is an important process in sexual reproduction of plants. It is an essential process that facilitates fertilisation in plants. Pollinating agents can be wind, water, insects and birds. Several changes take place in the flower after the fertilization has taken place.
(a) Write the main difference between self-pollination and cross-pollination.
(b) Name the part of the flower which attracts insects for pollination. What happens to this part after fertilisation ?
(c) (i) Define fertilisation. What is the fate of ovules and the ovary in a flower after fertilisation ?
OR
(c) (ii) In a germinating seed, which parts are known as future shoot and future root ? Mention the function of cotyledon. **[(31/5/1); (31/5/2); (31/5/3)]**

Year 2023

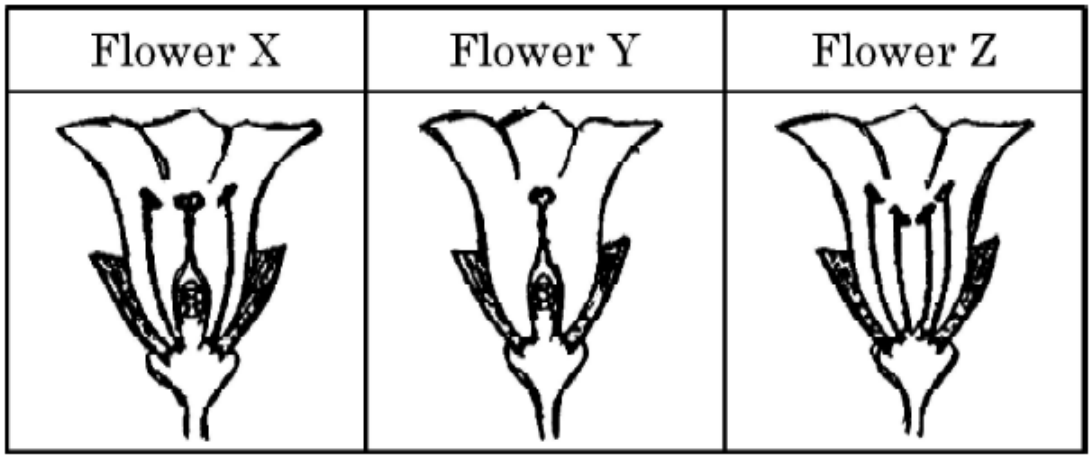
Multiple Choice Questions [1 Mark]

1) Select the INCORRECT match (between the plant and its vegetative part) from the following : **[(31/1/1)]**
   (a) Bryophyllum, leaf (b) Potato, stem (c) Money-plant, stem (d) Rose, root
2) Plants which bear unisexual flowers are:**[(31/2/1); (31/2/2); (31/2/3)]**
   (a)Mustard and Papaya
   (b)Hibiscus and Watermelon
   (c)Mustard and Hibiscus
   (d)Water melon and Papaya
3) When an 'X' bearing sperm fertilizes the egg, the resulting zygote has the following combination of chromosomes:**[(31/2/1); (31/2/2); (31/2/3)]**
   (a)44 + XX (b)44 + XY (c)22 + XX (d)22 + XY
4) The number of chromosomes in parents and off springs of a particular species undergoing sexual reproduction remain constant due to : **[(31/4/1); (31/4/2)]**
   (a) doubling of chromosomes after zygote formation.
   (b) halving of chromosomes after zygote formation.
   (c) doubling of chromosomes before gamete formation.
   (d) halving of chromosomes at the time of gamete formation.
5) During adolescence, reproductive phase starts and : **[(31/4/2)]**
   (a) general growth rate begins to slow down
   (b) height becomes less
   (c) the body weight is reduced
   (d) hair growth decreases
6) Which pair of sex chromosome will determine a male ? **[(31/4/2)]**
   (a) XO (b) XX (c) XY (d) YY
7) The bacterial and the viral infections that may be caused due to unsafe sex respectively are :**[(31/5/1);(31/5/2); (31/5/3)]**
   (a) Warts and HIV-AIDS (b) HIV-AIDS and Warts
   (c) Gonorrhoea and Syphilis (d) Syphilis and Warts
8) Choose the correct order of the stages of binary fission in Leishmania. **[(31/6/1); (31/6/2)**



(a) I, II, III, IV, V (b) I, III, II, V, IV (c) I, III, V, II, IV (d) I,II, Ill, V, IV

9) Consider the following three flowers namely X, Y and Z. Which flower(s) would develop into a fruit ? **[(31/6/1); (31/6/2); (31/6/3)]**



(a) 'X' only (b) 'Z' only (c) 'X' and 'Y' only (d) 'Y and 'Z'

10) The thread like structures that develop on a moist slice of bread in Rhizopus are **[(31/6/3)]**
(a) Sporangia (b) Filaments (c) Rhizoids (d) Hyphae

11)

Assertion and Reasoning [1 Mark]

These consist of two statements —Assertion (A) and Reason(R). Answer these questions selecting the appropriate option given below:
(a) Both Assertion (A) and Reason(R) are true and Reason(R) is the correct explanation of the Assertion(A).
(b)Both Assertion (A) and Reason(R) are true, but Reason(R) is not the correct explanation of the Assertion (A).
(c)Assertion (A) is true, but Reason(R) is false.
(d)Assertion (A) is false,but Reason(R) is true.

12) Assertion (A): When a bacterium divides into two, and the resultant two bacteria divide again, the four bacteria produced would be almost similar.
Reason(R): DNA copying involves small inaccuracies in there production process. **[(31/2/1)]**

13) Assertion (A) : Testes in human males are located outside the abdominal cavity in scrotum.
Reason (R) : Scrotum provides a lower temperature than the normal body temperature for sperm formation. **[(31/6/3)]**

14)

Long Answer Type Questions [5 Marks]

1) (a)Name the parts of a bisexual flower that are not directly involved in reproduction.
(b)Differentiate between self pollination and cross pollination. List any two significance of pollination.
(c)What is the fate of ovules and ovary after fertilization in a flower? **[(31/1/1)]**

2) (a) What happens when the egg is not fertilised?
(b)How is sperm genetically different from a human egg/ova ?

(c) List any three contraceptive methods practiced for family planning. Mention how these methods work. **[(31/1/2)]**

3) (a) Mention the role of the following organs of human male reproductive system:
(i) Testis
(ii) Scrotum
(iii) Vas-deferens
(iv) Seminal vesicle
(b) What is Placenta? State its function in a human female. **[(31/1/3)]**

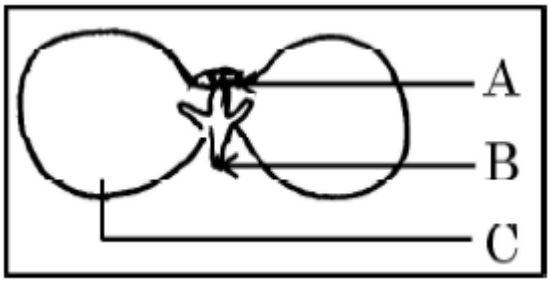
4) (i) Name and explain the two modes of asexual reproduction observed in hydra.
(ii) What is vegetative propagation ? List two advantages of using this technique. **[(31/4/1); (31/4/2); (31/4/3)]**

5) (i) Where are testes located in the human males and why ? State two function of the testes.
(ii) In the human female, one of the ovaries releases an egg every month. State the changes that take place if
(1) the egg is fertilized, and
(2) the egg is not fertilized.
(iii) What is done during the surgical method in males and females to prevent pregnancy? **[(31/5/1); (31/5/2); (31/5/3)]**

6) (i) What happens when :
(1) Leaves of Bryophyllum fall on the soil ?
(2) Planaria is cut into many pieces ?
(3) Sporangia of Rhizopus on maturation liberate spores ?
Mention the modes of reproduction in each of the above three cases.
(ii) Write the changes that occur in a flower once the fertilization has taken place.**[(31/5/1); (31/5/2); (31/5/3)]**

7) Give reason for the following :
(a) During reproduction inheritance of different proteins will lead to altered body designs.
(b) Fertilization cannot take place in flowers if pollination does not occur.
(c) All multicellular organisms cannot give rise to new individuals through fragmentation or regeneration.
(d) Vegetative propagation is practised for growing only some type of plants.
(e) The parents and off-springs of organisms reproducing sexually have the same number of chromosomes. **[(31/6/1); (31/6/2); (31/6/3)]**

8) (i) Name the two types of pollination and differentiate between them. **[(31/6/3)]**
(ii) Explain the post fertilization changes that occur in the ovary of a flower.
(iii) Given below is a diagram of a germinating seed. Label the parts that
(i) gives rise to future shoot.
(ii) gives rise to future root system.
(iii) stores food.



9)

Case Study [4 Marks]

1) All the reproductive methods of living organisms are broadly categorized into two types:
1.A sexual reproduction and 2.Sexual reproduction.
A sexual reproduction involves the participation of a single parent without the formation of gametes, fertilization and transfer of genetic material. This method is a common means of rapidly increasing offsprings under favourable conditions.
(a)Name the type of fission that occurs in Leishmania and Plasmodium.
(b)Write one advantage of sexual mode of reproduction over asexual reproduction.
(c)Give reasons why:
(i) Colonies of yeast fail to multiply in water but multiply in sugar solution.
(ii)Rhizopus individuals do not grow on a dry slice of bread.
OR
(c) Name the filamentous structures a student could identify when he collected water from a pond that appeared dark green. How do these organisms multiply? Explain. 2**[(31/2/1); (31/2/2); (31/2/3)]**

2) In some families, either rural or urban, females are tortured for giving birth to a female child. They do not seem to understand the scientific reason behind the birth of a boy or a girl. In fact the mother is not responsible for the sex of the child and it has been genetically proved that the sex of a newborn is determined by what the child inherits from the father.
(a) State the basis on which the sex of a newborn baby is determined in humans. 1
(b) Why is the pair of sex chromosomes called a mismatched pair in males ? 1
(c) How is the original number of chromosomes present in the parents restored in the progeny ? 2
OR
(c) Explain by giving two examples of the organisms in which the sex is not genetically determined. 2 **[(31/5/1); (31/5/2); (31/5/3)]**

3)

4)

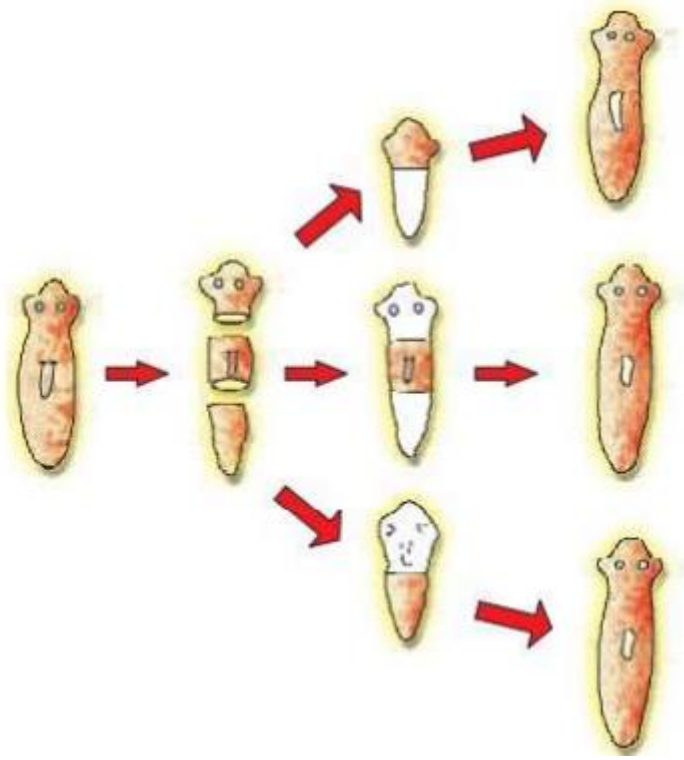
Year 2022

Short Answer Type Questions [2 Marks]

1) (a) Which of the following flowers will have higher possibility of self-pollination?
Mustard, Papaya, Watermelon, Hibiscus
(b) List the two reproductive parts of a bisexual flower. **[(31/1/1); (31/1/2)]**

2) Which one of the two multicellular organisms - Spirogyra and Planaria reproduces by regeneration and why? Give an example of any other organism which can also reproduce by the same process. **[(31/1/1)]**

3) (a) Name the process shown below and define it :



(b) Name the types of cells present in the organisms which exhibit this process. **[(31/1/2)]**

4) (a) What happens when in a human female the egg released by the ovary is not fertilised?
(b) Name one bacterial and one viral infection caused due to unsafe sex. **[(31/1/3)]**

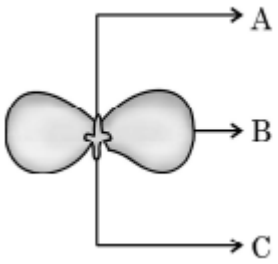
5) Give reasons:
(i) Placenta is extremely essential for foetal development
(ii) Uterine lining becomes thick and spongy after fertilization. **[(31/2/1)]**

6) (a) Name the reproductive and non-reproductive parts of bread mould(Rhizopus).
(b) List any two advantages of vegetative propagation. **[(31/2/1); (31/2/2)]**

7) What is puberty? Mention any two changes that are common to both boys and girls in early teenage years. **[(31/2/1);(31/2/2); (31/2/3)]**

8) Name the reproductive parts of an Angiosperm. Where are these parts located? Explain the structure of male reproductive part. **[(31/2/1); (31/2/2); (31/2/3)]**

9) In the following figure showing germinating gram seed, name the parts labelled as A, B and C:



Why is part 'B' considered to be important during germination? **[(31/2/2)]**

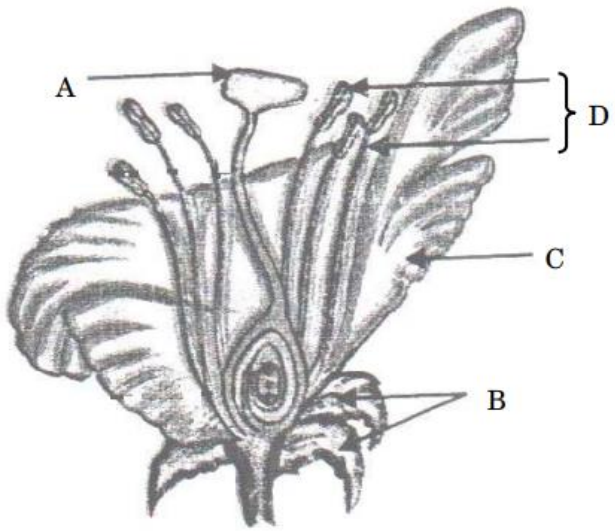
10) (a) State one drawback of each of the following
(i) Oral contraceptive pills
(ii)Copper-T.
(b) Under which category of contraceptive methods, is the use of condom kept? In what way, its use is better as compared to other method of contraception? **[(31/2/3)]**

11) Suggest any two contraceptive methods to control the size of human population and explain them. **[(31/3/2); (31/3/3)]**

12) Name the part/organ of the human female reproductive system
(a) where contraceptive devices such as loop or copper-T are placed to prevent pregnancy.
(b) which is blocked to prevent the transfer of eggs.
(c) where formation of green cells as ova takes place.
(d) from where the embryo gets nutrition from the mother's blood. **[(31/3/1)]**

13) Name the part/organ of the human male reproductive system
(a) which is a common passage for both sperms as well as urine.
(b) where formation of germ cells or sperms takes place.
(c) which is blocked to prevent the transfer of sperm.
(d) which provides nutrition to the sperms. **[(31/3/2)]**

14) (a) In the given diagram, name the parts where (i) pollen grains are produced, and (ii) pollen grains are transferred.



(b) What happens to ovule and ovary after fertilisation? **[(31/3/3)]**

15) Mention the functions of (a)Placenta(b)Fallopian tubes (C)Uterus and (D) Ovary in the human female reproductive system? **[(31/4/1); (31/4/2)]**

16) (a) Differentiate between binary fission in Amoeba and binary fission in. Leishmania.
(b) How does reproduction takes place in malarial parasite? **[(31/4/1)]**

17) What is Regeneration? Explain the process of regeneration in Planaria.**[(31/4/2)]**

18) Differentiate between the process of binary fission and multiple fission giving an example of each. **[(31/4/3)]**

19) What is Pistil (Carpel)? State the main function of any two of its parts. **[(31/B/5)]**

20) What is Stamen? State what happens when a pollen lands on a suitable stigma.**[(31/B/5)]**

21) Explain briefly how vegetative propagation takes place in a 'Bryophyllum' plant.**[(31/B/5)]**

Short Answer Type Questions [3 Marks]

1) Mention one function each of the following organs in human male reproductive system :
(i) Testis
(ii) Scrotum
(iii) Vas deferens
(iv) Prostate gland
(b) Name the type of germ cell which (i) is motile, and (ii) stores food. **[(31/1/1)]**

2) (a) Name the two types of gametes produced by men.
(b) Does a male child inherit X chromosome from his father? Justify.
(c) How many types of gametes are produced by a human female? **[(31/2/1)]**

3) What are chromosomes? Explain how stability of the DNA of the species is ensured in sexually reproducing organisms.**[(31/2/3)]**

4) In flowering plants, the polling grains are transferred to stigma by pollination but the female germ cells are present in the ovary. Explain with help of labelled diagram (only concerned parts), how the male germ cell reaches the ovary. **[(31/4/1); (31/4/2); (31/4/3)]**

5) Write the total number of chromosomes along with the sex chromosomes that are present in a human male and a human female. Explain how, in sexually reproducing organisms, the number of chromosomes in the progeny remains the same as that of the parent. **[(31/B/5)]**

6) Write the functions of the following parts of the human female reproductive system:
(i) Ovary (ii) Fallopian tube (iii) Uterus **[(31/B/5)]**

Case-based questions [4 marks]

1) The mechanism by which the sex of an individual is determined is called sex-determination. In human beings, sex of a newborn is genetically determined, whereas in some others it is not. There are 46 (23 pairs) chromosomes in human beings. Out of these, 44 (22 pairs) control the body characters and 2 (one pair) are known as sex chromosomes. The sex chromosomes are of two types X chromosome and Y chromosome. At the time of fertilisation, depending upon which type of male gamete fuses with the female gamete, the sex of the newborn child is decided.
(a) Why is a pair of sex chromosomes in human beings called a mismatched pair in terms of type and size?

(b) Out of male or female, which of them has a perfect pair of sex chromosomes? In case of a perfect pair, will the gametes produced be of the same kind or of a different kind?

(c) (i) Name two animals whose sex is not genetically determined. Explain the process of their sex determination.

OR

(ii) With the help of a flowchart only, show how sex is genetically determined in human beings.

[(31/1/1)]

2) The mechanism by which the sex of an individual is determined is called sex-determination. In human beings, sex of a newborn is genetically determined, whereas in some others it is not. There are 46 (23 pairs) chromosomes in human beings. Out of these, 44 (22 pairs) control the body characters and 2 (one pair) are known as sex chromosomes. The sex chromosomes are of two types X chromosome and Y chromosome. At the time of fertilisation, depending upon which type of male gamete fuses with the female gamete, the sex of the newborn child is decided.

(a) Why is a pair of sex chromosomes in human beings called a mismatched pair in terms of type and size?

(b) If the gametes always have half the number of chromosomes, then how is the original number of chromosomes restored in the organism?

(c) (i) Name two animals whose sex is not genetically determined. Explain the process of their sex determination.

OR

(ii) With the help of a flowchart only, show how sex is genetically determined in human beings.

[(31/1/2)]

3) The mechanism by which the sex of an individual is determined is called sex-determination. In human beings, sex of a newborn is genetically determined, whereas in some others it is not. There are 46 (23 pairs) chromosomes in human beings. Out of these, 44 (22 pairs) control the body characters and 2 (one pair) are known as sex chromosomes. The sex chromosomes are of two types X chromosome and Y chromosome. At the time of fertilisation, depending upon which type of male gamete fuses with the female gamete, the sex of the newborn child is decided.

(a) What is the statistical probability of getting either a male or a female child ? Justify your answer.

(b) Out of male or female, which of them has a perfect pair of sex chromosomes ? In case of a perfect pair, will the gametes produced be of the same kind or of a different kind?

(c) (i) Name two animals whose sex is not genetically determined. Explain the process of their sex determination.

OR

(ii) With the help of a flowchart only, show how sex is genetically determined in human beings.

[(31/1/3)]

4) The modes by which various organisms reproduce depend on the body design of the organisms. In asexual reproduction, a single individual parent produces offsprings without the involvement of gametes. This method is a common means of increasing the offsprings rapidly under favourable

conditions. Asexual reproduction occurs mostly in unicellular organisms, some plants and certain simple multicellular animals.

(a) State the name of the organism in which binary fission takes place in a definite orientation. Also name the disease caused by this organism.

(b) List any two advantages of producing plants through vegetative propagation.

(c) (i) Explain the process of budding in Hydra.

OR

(ii) What happens when

(I) a spirogyra filament matures and attains a considerable length, and

(II) a sporangia in Rhizopus bursts on maturation? **[(31/3/1)]**

5) The modes by which various organisms reproduce depend on the body design of the organisms. In asexual reproduction, a single individual parent produces offsprings without the involvement of gametes. This method is a common means of increasing the offsprings rapidly under favourable conditions. Asexual reproduction occurs mostly in unicellular organisms, some plants and certain simple multicellular animals.

(a) Why is regeneration not same as reproduction ?

(b) List any two advantages of producing plants through vegetative propagation.

(c) (i) Explain the process of budding in Hydra.

OR

(ii) What happens when

(I) a spirogyra filament matures and attains a considerable length, and

(II) a sporangia in Rhizopus bursts on maturation? **[(31/3/2)]**

6) The modes by which various organisms reproduce depend on the body design of the organisms. In asexual reproduction, a single individual parent produces offsprings without the involvement of gametes. This method is a common means of increasing the offsprings rapidly under favourable conditions. Asexual reproduction occurs mostly in unicellular organisms, some plants and certain simple multicellular animals.

(a) State the name of the organism in which binary fission takes place in a definite orientation. Also name the disease caused by this organism.

(b) Leaves of 'Bryophyllum' when they fall on the soil develop into new plants whereas a banana leaf will not be able to do so. Why?

(c) (i) Explain the process of budding in Hydra.

OR

(ii) What happens when

(I) a spirogyra filament matures and attains a considerable length, and

(II) a sporangia in Rhizopus bursts on maturation? **[(31/3/3)]**

7) Sex of an individual is determined by different factors in various species. Some animals rely entirely on the environmental ones, while in some other animals the individuals can change their sex during their life time indicating that sex of some species is not genetically determined. However in human beings, the sex of an individual is largely determined genetically.

(a) In what way are the sex chromosomes 'X' and 'Y' different in size? Name the mismatched pair of sex chromosome in humans.

(b) Write the number of pair/pairs of sex chromosomes present in human beings. In which one of the parent (male/female) perfect pair/pairs of sex chromosome are present?

(c) Citing two examples, justify the statement "Sex of an individual is not always determined genetically".

Or

Draw a flow chart to show that sex is determined genetically in human beings.**[(31/4/1)]**

8) Sex of an individual is determined by different factors in various species. Some animals rely entirely on the environmental ones, while in some other animals the individuals can change their sex during their life time indicating that sex of some species is not genetically determined. However in human beings, the sex of an individual is largely determined genetically.

(a) In what way are the sex chromosomes 'X' and 'Y' different in size? Name the mismatched pair of sex chromosome in humans.

(b) Write the number of chromosomes present in human beings apart from sex chromosomes. Which of the parent has mismatched pair of sex chromosomes?

(c) Citing two examples, justify the statement "Sex of an individual is not always determined genetically".

Or

Draw a flow chart to show that sex is determined genetically in human beings.**[(31/4/2)]**

9) Sex of an individual is determined by different factors in various species. Some animals rely entirely on the environmental ones, while in some other animals the individuals can change their sex during their life time indicating that sex of some species is not genetically determined. However in human beings, the sex of an individual is largely determined genetically.

(a) What is the statistical probability of getting either a male child or a female child?

(b) Write the number of pair/pairs of sex chromosomes present in human beings. In which one of the parent (male/female) perfect pair/pairs of sex chromosome are present?

(c) Citing two examples, justify the statement "Sex of an individual is not always determined genetically".

Or

Draw a flow chart to show that sex is determined genetically in human beings. **[(31/4/3)]**

Year 2020

Multiple choice questions [1 Mark]

1) Fertilisation is the process of
   (a) transfer of male gamete to female gamete.
   (b) fusion of nuclei of male and female gamete.
   (c) adhesion of male and female reproductive organs.
   (d) the formation of gametes by a reproductive organ. **[(31/4/1); (31/4/2)]**
2) Which of the following statements is not true about a 'bud' in 'Hydra' ?
   (a) It is an outgrowth.
   (b) It forms due to repeated cell division at one specific site.
   (c) It detaches from the parent body as soon as it is produced.
   (d) It becomes a new independent individual. **[(31/4/3)]**

Assertion and Reasons

Two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below :

(a) Both A and R are true and R is correct explanation of the Assertion.
(b) Both A and R are true but R is not the correct explanation of the Assertion.
(c) A is true but R is false.
(d) A is false but R is true.

1) Assertion (A) : The sex of a child in human beings will be determined by the type of chromosome he/she inherits from the father.
   Reason (R) : A child who inherits 'X' chromosome from his father would be a girl (XX), while a child who inherits a 'Y' chromosome from the father would be a boy (XY).**[(31/4/1); (31/4/3)]**

Short Answer Type Questions [3 Marks]

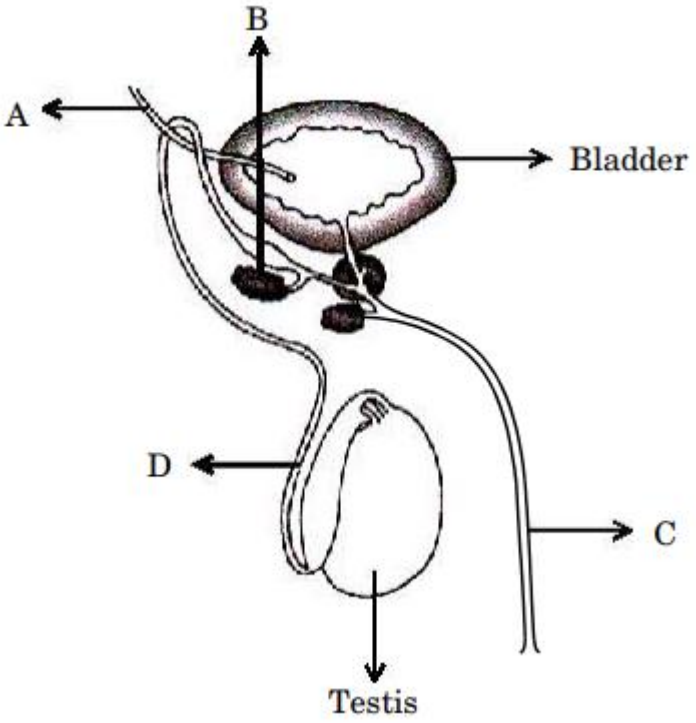
1) Define the term pollination. Differentiate between self pollination and cross pollination. What is the significance of pollination?**[(31/1/1); (31/1/3)]**
2) (a) List in tabular form two differences between binary fission and multiple fission.
   (b) What happens when a mature Spirogyra filament attains considerable length.**[(31/1/2)]**
3) What are chromosomes? Explain how in sexually reproducing organisms the number of chromosomes in the progeny is maintained. **[(31/2/1); (31/2/3)]**
4) (a) What provides nutrition to human sperms? State the genetic constitution of a sperm.
   (b) Mention the chromosome pair present in zygote which determines the sex of (i) a female child, and (ii) a male child. **[(31/5/2); (31/5/3)]**

Long Answer Type Questions [5 Marks]

1) (a) List three different categories of contraception methods.
   (b) Why has Government of India prohibited prenatal sex determination by law? State its benefits in the long run.
   (c) Unsafe sexual act can lead to various infections. Name two bacterial and two viral infections caused due to unsafe sex.**[(31/2/1); (31/2/2); (31/2/3)]**
2) (a) In the female reproductive system of human beings, state the funtions of (i) ovary (ii) oviduct
   (b) Mention the changes which the uterus undergoes, when
   (i) it has to receive a zygote.
   (ii) no fertilization takes place.

(c) State the function of placenta.**[(31/2/1); (31/2/2); (31/2/3)]**

3) (a) Draw a diagram showing germination of pollen on stigma of a flower and mark on it the following organs/parts :
   (i) Pollen Grain
   (ii) Pollen tube
   (iii) Stigma
   (iv) Female germ cell
   (b) State the significance of pollen tube.
   (c) Name the parts of flower that develop after fertilization into (i) Seed (ii) Fruit **[(31/3/1); (31/3/2)]**
4) (a) "Use of a condom is beneficial for both the sexes involved in a sexual act." Justify this statement giving two reasons.
   (b) How do oral contraceptive help in avoiding pregnancies?
   (c) What is sex selective abortion? How does it affect a healthy society? (State any one consequence) **[(31/3/1); (31/3/2)]**
5) (a) Suggest any two categories of contraceptive methods to control the size of human population which is essential for the prosperity of a country. Also explain about each method briefly.
   (b) Name two bacterial and two viral infections each that can get sexually transmitted.
   (c) List two advantages of using condom during sexual act. **[(31/3/3)]**
6) (a) Draw a diagram to show spore formation in Rhizopus.
   (b) With the help of an example differentiate between the process of Budding and Fragmentation.
   (c) Why is vegetative propagation practiced for growing some type of plants? **[(31/3/3)]**
7) Draw a neat diagram showing fertilisation in a flower and label
   (a) Pollen tube,
   (b) Male germ cell and
   (c) Female germ cell, on it. Explain the process of fertilisation in a flower. What happens to the (i) ovary and (ii) ovule after fertilisation? **[(31/4/1); (31/4/2)]**
8) (a) What is puberty?
   (b) Describe in brief the functions of the following parts in the human male reproductive system :
   (i) Testes
   (ii) Seminal vesicle
   (iii) Vas deferens
   (iv) Urethra
   (c) Why are testes located outside the abdominal cavity?
   (d) State how sperms move towards the female germ cell. **[(31/4/1); (31/4/2)]**
9) (a) List the sequence of events in the uterus of a human female from fertilisation of egg till childbirth.
   (b) State the changes that are observed in the uterus if fertilisation of egg does not occur. **[(31/4/3)]**
10) (a) What is vegetative propagation? List three of its advantages. Name two methods employed to grow new plants through vegetative propagation.
   (b) Explain, giving reason, why more complex organisms cannot give rise to new individuals through regeneration. **[(31/4/3)]**
11) Based on the given diagram answer the questions given below :



(a) Label the parts A, B, C and D.
(b) Name the hormone secreted by testis and mention its role.
(c) State the functions of B and C in the process of reproduction. **[(31/5/1); (31/5/2)]**

12) (a) Name the mode of reproduction of the following organisms and state the important feature of each mode :
(i) Planaria
(ii) Hydra
(iii) Rhizopus
(b) We can develop new plants from the leaves of Bryophyllum. Comment.
(c) List two advantages of vegetative propagation over other modes of reproduction. **[(31/5/1); (31/5/2)]**

13) (a) List two reasons of using contraceptive methods by married couples.
(b) Write in proper sequence the processes going on in the different organs of the reproductive system of a human female starting from the time of egg production to childbirth. **[(31/5/3)]**

14) (a) Identify the modes of asexual reproduction in each of the following organisms :
(i) Hydra
(ii) Planaria
(iii) Amoeba
(iv) Spirogyra
(v) Rhizopus
(b) List three advantages of vegetative propagation.
(c) Why can fertilisation not take place in flowers if pollination does not occur? **[(31/5/3)]**

Case Based Question [4 Marks]

1) The growing size of the human population is a cause of concern for all people. The rate of birth and death in a given population will determine its size. Reproduction is the process by which organisms increase their population. The process of sexual maturation for reproduction is gradual

and takes place while general body growth is still going on. Some degree of sexual maturation does not necessarily mean that the mind or body is ready for sexual acts or for having and bringing up children. Various contraceptive devices are being used by human beings to control the size of population.

(a) List two common signs of sexual maturation in boys and girls.

(b) What is the result of reckless female foeticide?

(c) Which contraceptive method changes the hormonal balance of the body?

(d) Write two factors that determine the size of a population. **[(31/1/1); (31/1/2); (31/1/3)]**

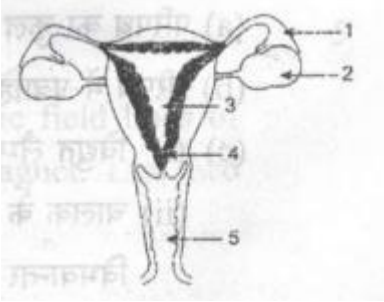
Year 2019

Short Answer Type Questions [3 Mark]

1) What is carpel? Write the function of its various parts.**[(31/2/1)]**
2) Distinguish between pollination and fertilisation. Mention the site and the product of fertilisation in a flower.**[(31/2/2)]**
3) (a) Budding, fragmentation and regeneration, all are considered as asexual mode of reproduction. Why?
   (b) With the help of neat diagrams, explain the process of regeneration in Planaria. **[(31/2/3)]**

Long Answer Type Questions [5 Mark]

1) Define pollination. Explain the different types of pollination. List two agents of pollination? How does suitable pollination lead to fertilization? **[(31/1/1); (31/1/2); (31/1/3)]**
2) (a) Identify the given diagram. Name the parts 1 to 5.



   (b) What is contraception? List three advantages of adopting contraceptive measures. **[(31/1/1); (31/1/2); (31/1/3)]**
3) What is sexual reproduction? Explain how this mode of reproduction gives rise to more viable variations than asexual reproduction. How does this affect the evolution? **[(31/2/3)]**
4) (a) What is reproduction? List its two types.
   (b) How are the modes of reproduction different in unicellular and multicellular organisms? **[(31/3/1); (31/3/2); (31/3/3)]**
5) (a) What are Sexually Transmitted Diseases (STD)? List two viral and two bacterial STDs.
   (b) What is contraception? List three reasons for adopting contraceptive methods. **[(31/3/1); (31/3/2); (31/3/3)]**
6) (a) Define vegetative propagation. List its two methods.
   (b) Why is this mode practised for growing some types of plants?
   (c) Explain the process of budding in Hydra with the help of labelled diagrams. **[(31/4/1); (31/4/2); (31/4/3)]**

7) What is contraception? List its four different methods. State four reasons for adopting contraceptive methods. **[(31/4/1); (31/4/2); (31/4/3)]**
8) (a) Distinguish between cross-pollination and self-pollination. Mention the site and product of fertilization in a flower.
(b) Draw labelled diagram of a pistil showing the following parts :
Stigma, Style, Ovary, Female germ cell **[(31/5/1); (31/5/2); (31/5/3)]**
9) (a) Draw a diagram of human female reproductive system and label the parts :
(i) which produce an egg.
(ii) where fertilization takes place.
(b) List two bacterial diseases which are transmitted sexually.
(c) What are contraceptive devices? Give two reasons for adopting contraceptive devices in humans. **[(31/5/1); (31/5/2); (31/5/3)]**

Year 2018

Short Answer Type Questions [3 Marks]

1) Write one main difference between asexual and sexual mode of reproduction. Which species is likely to have comparatively better chances of survival – the one reproducing asexually or the one reproducing sexually ? Give reason to justify your answer. **[All India]**

Long Answer Type Questions [5 Marks]

1) (a) Write the function of following parts in human female reproductive system:
(i) Ovary (ii) Oviduct (iii) Uterus
(b) Describe in brief the structure and function of placenta. **[All India]**
2) Describe in brief the role of the following parts in human male reproductive system :
(i) Testis
(ii) Seminal vesicle
(iii) Vas deferens
(iv) Urethra
(v) Prostate glands **[For Blind Student]**

Year 2017

Short Answer Type Questions [1 Marks]

1) When a cell reproduces, what happens to its DNA? **[All India]**
2) Newly formed DNA copies may not be identical at times. Give one reason. **[All India]**
3) Why is variation important for a species? **[All India]**
4) Name the method by which spirogyra reproduces under favourable conditions. Is this method sexual or asexual? **[Delhi]**
5) Name the organs producing sperms and ova respectively in humans. **[Delhi]**
6) Name the organ in humans which produces (i) male germ cell, and (ii) female germ cell. **[Foreign]**
7) What is fertilisation? Where does it occur in a human female? **[Foreign]**

Short Answer Type Questions [3 Marks]

1) Reproduction is one of the most important characteristics of living beings. Give three reasons in support of the statement. **[All India]**
2) What is vegetative propagation ? State two advantages and two disadvantages of this method. **[All India]**

3) List three techniques that have been developed to prevent pregnancy. Which one of these techniques is not meant for males ? How does the use of these techniques have a direct impact on the health and prosperity of a family ? **[All India]**
4) Describe reproduction by spores in Rhizopus. **[All India]**
5) List the two types of reproduction. Which one of the two is responsible for bringing in more variations in its progeny and how ? **[All India]**
6) What happens when :
   (a) Accidently, Planaria gets cut into many pieces?
   (b) Bryophyllum leaf falls on the wet soil?
   (c) On maturation sporangia of Rhizopus bursts? **[Delhi]**
7) State the basic requirement for sexual reproduction ? Write the importance of such reproductions in nature. **[Delhi]**
8) State the changes that take place in the uterus when :
   (a) Implantation of embryo has occurred.
   (b) Female gamete / egg is not fertilised. **[Delhi]**
9) What is regeneration? Give one example of an organism that shows this process and one organism that does not. Why does regeneration not occur in the latter? **[Foreign]**
10) What is contraception? Name any two methods. How does the use of these methods have a direct effect on the health and prosperity of a family ? State any three points. **[Foreign]**
11) How do variations arise in organisms? ‘‘Variation is useful for the survival of species.’’ Justify this statement with the help of an example. **[Foreign]**
12) What is placenta? Describe its two major functions. **[Foreign]**
13) Name the two types of mammalian gametes. How are these different from each other? Name the type of reproduction they are involved in. Write the advantage of this type of reproduction. **[Foreign]**

Long Answer Type Questions [5 Marks]

1) (a) Write the functions of each of the following parts in a human female reproductive system :
   (i) Ovary
   (ii) Uterus
   (iii) Fallopian tube
   (b) Write the structure and functions of placenta in a human female. **[All India]**
2) (a) Name the organ that produces sperms as well as secretes a hormone in human males. Name the hormone it secretes and write its functions.
   (b) Name the parts of the human female reproductive system where fertilisation occurs.
   (c) Explain how the developing embryo gets nourishment inside the mother’s body. **[Delhi]**
3) Give one example each of unisexual and bisexual flowers. Differentiate between the two types of pollination that occur in flowers. What happens when a pollen lands on a suitable stigma? Write about the events that occur till the seed formation in the ovary. **[Foreign]**

Year 2016

Very Short Answer Type Questions [1 Marks]

1) What happens when a mature spirogyra filament attains considerable length? **[All India]**
2) What are those organisms called which bear both the sex organs in the same individiual. Give one example of such organism. **[All India]**
3) List two functions of ovary of human female reproductive system. **[All India]**

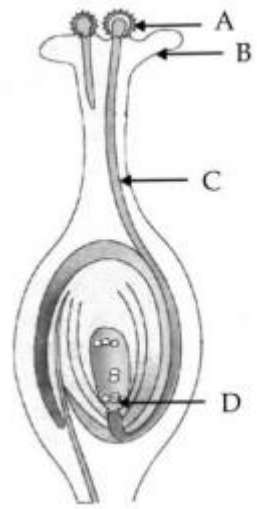
4) What happens when a Planaria gets cut into two pieces? **[Delhi]**
5) Name the part of Bryophyllum where the buds are produced for vegetative propagation. **[Delhi]**
6) List two plants which reproduce by vegetative propagation. **[For Blind Candidate]**
7) Name the method by which hydra reproduces. Is this method sexual or asexual ? **[Foreign]**
8) List two unisexual flowers. **[Foreign]**
9) Why is fertilization not possible without pollination ? **[Foreign]**
10) What is DNA? **[Delhi]**

Very Short Answer Type Questions [2 Marks]

1) List two distinguishing, feature in tabular form between binary fission and fragmentation. **[For Blind Candidate]**
2) Name the type of asexual reproduction in which two individuals are formed from a single parent and the parental identity is lost.
   Explain briefly how this happens. **[For Blind Candidate]**
3) Draw a labelled diagram to show that particular stage of binary fission in amoeba in which its nucleus elongates and divide into two and a constriction appears in its cell membrane. **[Delhi]**
4) In which asexual reproduction two individuals are formed from a single parent and the parental identity is lost? Draw the initial and the final stages of this type of reproduction to justify your answer. Write the event with which this process starts. **[Foreign]**

Short Answer Type Questions [3 Marks]

1) Define reproduction. How does it help in providing stability to the population of species ? **[All India]**
2) Explain the term “Regeneration” as used in relation to reproduction of organisms. Describe briefly how regeneration is carried out in multicellular organisms like Hydra. **[All India]**
3) (a) List two reasons for the appearance of variations among the progeny formed by sexual reproduction.
   (b)



(i) Name the part marked ‘A’ in the diagram.
(ii) How does ‘A’ reaches part ‘B’?
(iii) State the importance of the part ‘C’.
(iv) What happens to the part marked ‘D’ after fertilisation is over ? **[All India]**

4) In the context of reproduction of species state the main difference between fission and fragmentation. Also give one example of each. **[All India]**
5) How do organisms, whether reproduced asexually or sexually maintain a constant chromosome number through several generations? Explain with the help of suitable example. **[Delhi]**
6) Name the parts A, B and C shown in the following diagram and state one function of each.

[Delhi]

7) Suggest three contraceptive methods to control the size of human population which is essential for the health and prosperity of a country. State the basic principle involved in each. **[Delhi]**
8) What are the functions of testis in the human male reproductive system? Why are these located outside the abdominal cavity? Who is responsible for bringing about changes in appearance seen in boys at the time of puberty? **[Delhi]**
9) What is multiple fission? How does it occur in an organism? Explain briefly. Name one organism which exhibits this type of reproduction. **[Delhi]**
10) What is meant by pollination? Name and differentiate between the two modes of pollination in flowering plants. **[Delhi]**
11) What is meant by DNA copying? State its importance. **[For Blind Candidate]**
12) How does Hydra reproduce by budding ? Explain briefly. Why is budding called an asexual method of reproduction ? **[For Blind Candidate]**
13) Define pollination. Distinguish between self pollination and cross pollination. In a bisexual flower inspite of the young stamen being removed artificially, the flower produces fruit. How does it take place? **[For Blind Candidate]**
14) What is Pollination ? List its two types and write a distinguishing feature between the two. **[Foreign]**
15) What happens when
    (a) Planaria gets cut into two pieces ?
    (b) A mature spirogyra filament attains considerable length ?
    (c) On maturation sporangia burst ? **[Foreign]**
16) What is sexual reproduction ? List its four significances.**[Foreign]**
17) Name the reproductive parts of an angiosperm. Where are these parts located ? Explain in brief the structure of its female reproductive parts.**[Foreign]**
18) (a) Mention the role of the following organs of human male reproductive system :
    (i) Testis; (ii) Scrotum; (iii) Vas deferens; (iv) Prostate glands.
    (b) What are the two roles of testosterone ? **[Foreign]**

Long Answer Type Questions [5 Marks]

1) What is placenta ? Describe its structure. State its functions in case of a pregnant human female. **[All India]**
2) (a) Write the functions of the following parts in human female reproductive system :

(i) Ovary
(ii) Oviduct
(iii) Uterus
(b) Describe the structure and function of placenta. **[Delhi]**

3) (a) List two functions each of the following parts in human female reproductive system :
(i) Ovary ; (ii) Oviduct ; (iii) Uterus
(b) Explain how the embryo gets its nourishment inside the mother's body ? **[For Blind Candidate]**

4) What is vegetative propagation ? List with brief explanation three advantages of practising this process for growing some types of plants. Select two plants from the following which are grown by this process :
Banana, Wheat, Mustard, Jasmine, Gram. **[Foreign]**

5) (a) State in brief the functions of the following organs in the human female reproductive system : Ovary, Fallopian tube, Uterus
(b) What is menstruation ? Why does it occur ? **[Foreign]**

Year 2015

Very Short Answer Type Question [1 Mark]

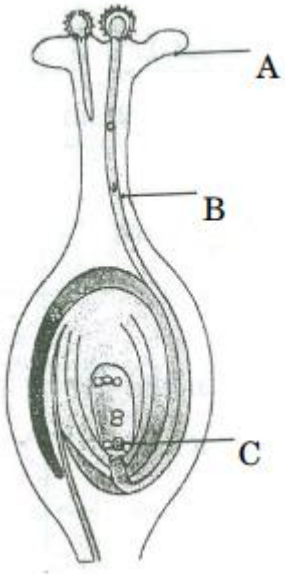
1) Name the life process of an organism that helps in the growth of its population. **[All India]**
2) Name two simple organisms having the ability of regeneration. **[All India]**
3) Name the causative agent of the disease ''Kala-azar'' and its mode of asexual reproduction. **[Foreign]**
4) Name the parts of a bisexual flower that are not directly involved in reproduction. **[Foreign]**
5) List two functions performed by the testis in human beings. **[Delhi]**

Very Short Answer Type Question [2 Mark]

1) A student is viewing under a microscope a permanent slide showing various stages of asexual reproduction by budding in yeast. Draw diagrams of what he sees (in proper sequence). **[Foreign]**
2) Name the type of asexual reproduction in which two individuals are formed from a single parent and the parental identity is lost. Draw the initial and the final stages of this type of reproduction. State the event with which this reproduction starts. **[Delhi]**
3) Write two differences between binary fission and multiple fission in tabular form. **[Delhi]**

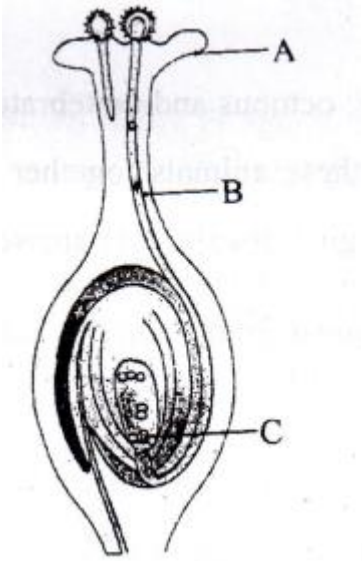
Short Answer Type Question [3 Mark]

1) List six specific characteristics of sexual reproduction. **[All India]**
2) What are chromosomes ? Explain how in sexually reproducing organisms the number of chromosomes in the progeny is maintained. **[All India]**
3) List four points of significance of reproductive health in a society. Name any two areas related to reproductive health which have improved over the past 50 years in our country.**[All India]**
4) Identify A, B and C in the given diagram and write one function of each.



[All India]

5) List four categories of contraceptive methods. State in brief two advantages of adopting such preventive methods. **[All India]**
6) Draw a diagram of the longitudinal section of a flower exhibiting germination of pollen on stigma and label (i) ovary, (ii) male germ-cell, (iii) female germ-cell and (iv) ovule on it.**[Foreign]**
7) Explain any three advantages of vegetative propagation. **[Foreign]**
8) What is placenta ? Explain its function in humans. **[Foreign]**
9) ''It is a matter of chance whether a couple will have a male or a female child.'' Justify this statement by drawing a flow chart. **[Foreign]**
10) Write one main difference between asexual and sexual mode of reproduction. Which species is likely to have comparatively better chances of survival — the one reproducing asexually or the one reproducing sexually ? Justify your answer. **[Foreign]**
11) Explain the process of regeneration in Planaria. How is this process different from reproduction ? **[Foreign]**
12) Why is DNA copying an essential part of the process of reproduction ? What are the advantages of sexual reproduction over asexual reproduction ? **[Foreign]**
13) Draw longitudinal section of a bisexual flower and label the following parts on it :
    (i) Anther
    (ii) Ovary
    (iii) Stigma
    (iv) Style **[Foreign]**
14) What is DNA copying ? State its importance. **[Delhi]**
15) Explain budding in hydra with the help of labelled diagrams only. **[Delhi]**
16) List any four methods of contraceptions used by humans. How does their use have a direct effect on the health and prosperity of a family. **[Delhi]**
17) (a) Name the following :
    (i) Thread like non-reproductive structures present in Rhizopus.
    (ii) 'Blobs' that develop at the tips of the non-reproductive threads in Rhizopus.
    (b) Explain how these structures protect themselves and what is the function of the structures released from the 'blobs' in Rhizopus. **[Delhi]**
18) Name the parts A, B and C shown in the diagram and 'write their functions.



[Delhi]

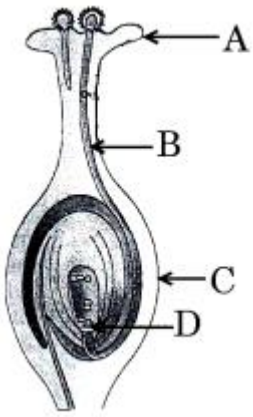
19) What are sexually transmitted diseases. List two example of each diseases caused due to (i) bacterial infection and (ii) viral infection. Which device or devices may be used to prevent the spread of such diseases. **[Delhi]**

20)

Long Answer Type Question [5 Marks]

1) (a) Name the human male reproductive organ that produces sperms and also secretes a hormone. Write the functions of the secreted hormone.
(b) Name the parts of the human female reproductive system where
(i) fertilisation takes place,
(ii) implantation of the fertilised egg occurs.
Explain how the embryo gets nourishment inside the mother's body. **[All India]**

2) (a) Identify A, B, C and D in the given diagram and write their names.



(b) What is pollination ? Explain its significance.
(c) Explain the process of fertilisation in flowers. Name the parts of the flower that develop after fertilisation into
(i) seed,
(ii) fruit. **[Foreign]**

3) Write the functions of the following in human female reproductive system:
Ovary, oviduct, uterus
How does the embryo get nourishment inside the mother's body? Explain in brief. **[Delhi]**

4) How many pairs of chromosomes are present in human beings? Out of these how many are sex chromosomes ? How many types of sex chromosomes are found in human beings?
"The sex of a newborn child is a matter of chance and none of the parents may be considered responsible for it". Draw a flow chart showing determination of sex of a newborn to justify this statement. **[Delhi]**

Year 2014

Very Short Answer Type Questions [1 Marks]

1) Name the information source for making proteins in the cells. **[Delhi]**
2) No two individual are absolutely alike in a population. Why ? **[All India]**

Very Short Answer Type Questions [2 Marks]

1) What is the main difference between sperms and eggs of humans ? Write the importance of this difference. **[All India]**
2) ''The chromosomal number of the sexually producing parents and their offspring is the same.'' Justify this statement. **[All India]**
3) Draw labelled diagrams to illustrate budding in Hydra. **[All India]**
4) How do Plasmodium and Leishmania reproduce ? Write one difference in their mode of reproduction. **[Foreign]**
5) Define multiple fission. Give its one example. **[Foreign]**
6) List two preparations shown every month by the uterus in anticipation of pregnancy in humans.**[Foreign]**
7) List four advantages of vegetative propagation. **[Delhi]**
8) List four modes of asexual reproduction. **[Delhi]**
9) List four modes of asexual reproduction other than fission in the living organisms. **[Delhi]**

Short Answer Type Questions [3 Marks]

1) Explain the process of regeneration in Planaria. How is this process different from reproduction ? **[All India]**
2) What is placenta ? State its function in human female. **[All India]**
3) List any two modes of asexual reproduction in animals. Under which mode of reproduction is vegetative propagation placed and why ? List two advantages of vegetative propagation.**[All India]**
4) List four methods of contraception used by humans.
Justify the following statement :
''The use of contraceptive methods has a direct effect on the health and prosperity of a family.'' **[All India]**
5) ''It is a matter of chance whether a couple will give birth to a male child or a female child.'' Justify this statement with the help of a flow chart showing the fusion of sex chromosomes.**[All India]**
6) Write one difference between asexual and sexual mode of reproduction. Which species is likely to have better chances of survival – the one reproducing asexually or the one reproducing sexually ? Justify your answer. **[All India]**
7) What is the effect of DNA copying, which is not perfectly accurate, on the reproduction process ? How does the amount of DNA remain constant though each new generation is a combination of DNA copies of two individuals ? **[All India]**

8) Describe in brief the function of the various parts of the female reproductive part of a bisexual flower. **[Foreign]**

9) On the notice board of ultrasound clinics it is generally stated. ''Here prenatal sex determination and disclosure of sex (boy or girl before birth) of foetus is not done. It is prohibited and punishable under law.''
   (a) List two advantages of imposing ban on prenatal sex determination.
   (b) What can students do to educate the society about the following ?
      (i) The ill-effects of indiscriminate female foeticide
      (ii) Adopting small family norms **[Foreign]**

10) Name the two reproductive parts of a bisexual flower which contain the germ cells. State the location and function of its female reproductive part. **[Foreign]**

11) What is vegetative propagation ? List its two advantages. Select two plants raised by this method from the list given below :
   Wheat, tomato, rose, pea, gram, corn, banana. **[Foreign]**

12) Draw diagrams to explain the regeneration that takes place in each of the body parts of planaria when its body is cut into three pieces. Name any other organism in which a similar process can be observed. **[Delhi]**

13) List any four methods of contraception used by humans. How does their use have a direct effect on the health and prosperity of a family ? **[Delhi]**

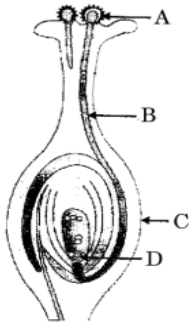
14) (a) Write the names of those parts of a flower which serve the same function as the following do in the animals :
   (i) testis, (ii) sperm, (iii) ovary, (iv) egg
   (b) State the function of flowers in the flowering plants. **[Delhi]**

15) On cutting the body of an organism into many pieces it was observed that many of these pieces developed as new individuals. Name the process and list two organisms in which this process may be observed. Draw a schematic diagram to illustrate the changes that are likely to be observed during the development of new individuals in any one of the organisms named. **[Delhi]**

Long Answer Type Questions [5 Marks]

1) (a) Draw a sectional view of human female reproductive system and label the part where
      (i) eggs develop.
      (ii) fertilisation take place.
      (iii) fertilised egg gets implanted.
   (b) Describe, in brief, the changes the uterus undergoes
      (i) to receive the zygote.
      (ii) if zygote is not formed. **[All India]**

2) (a) Name the parts labelled as A, B, C and D in the diagram given below:



   (b) What is pollination ? State its significance.

(c) How does fertilisation occur in flowers ? Name the parts of the flower that develop into (i) seed, and (ii) fruit after fertilisation. **[All India]**

3) List in tabular form the two differences between asexual and sexual mode of reproduction. Name and explain with the help of labelled diagram the process by which Hydra reproduces asexually.**[Foreign]**

4) (a) Name the human male reproductive organ that produces sperms and also secretes hormones. Write the functions of the hormone secreted.
(b) Name the parts of the human female reproductive system where (i) fertilization and (ii) implantation occur respectively. Explain how the embryo gets nutrition inside the mother's body. **[Foreign]**

5) (a) Give one example each of a unisexual and a bisexual flower.
(b) Mention the changes a flower undergoes after fertilization.
(c) How does the amount of DNA remain constant though each new generation is a combination of DNA copies of two individuals ? **[Delhi]**

6) (a) Name the respective part of human female reproductive system :
(i) that produces eggs,
(ii) where fusion of egg and sperm takes place, and
(iii) where zygote gets implanted.
(b) Describe in brief what happens to the zygote after it gets implanted. **[Delhi]**

7) (a) Give one example each of a unisexual and a bisexual flower.
(b) Mention the changes a flower undergoes after fertilization.
(c) How does the amount of DNA remain constant though each new generation is a combination of DNA copies of two individuals ? **[Delhi]**

8) (a) Write the name of the human male reproductive organ that produces sperms and secretes a hormone. Name the hormone secreted and state its function ?
(b) Write the site of fertilization and the part where the zygote gets implanted in the human female.
(c) State, in brief, how an embryo gets its nourishment inside the mother's body. **[Delhi]**

Year 2013

Very Short Answer Type Questions [2 Marks]

1) "The chromosomes number of the sexually reproducing parents and theiroffspring is the same." Justify this statement. **[Delhi]**

Short Answer Type Questions [3 Marks]

1) (a) Explain the process of regeneration in Planaria.
(b) How is regeneration different from reproduction ? **[Delhi]**

2) Write two examples each of sexually transmitted diseases caused by(i) virus, (ii) bacteria. Explain how the transmission of such diseases be prevented ? **[Delhi]**

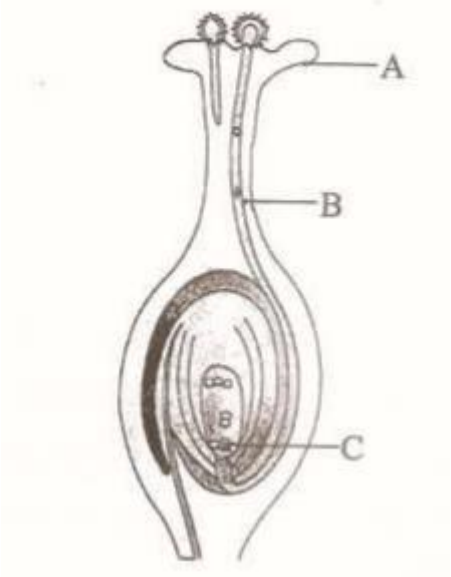
3) "The sex of a newborn child is a matter of chance and none of the parents may be considered responsible for it." Justify this statement with the help of flow chart showing determination of sex of a newborn. **[Delhi]**

Long Answer Type Questions [5 Marks]

1) (a) List three distinguishing features between sexual and asexual types of reproduction.

(b) Explain why variations are observed in the offsprings of sexually reproducing organisms? **[Delhi]**

2) (a) Identify A, B and C in the given diagram and write their functions.



(b) Mention the role of gamete and zygote in sexually reproducing organisms. **[Delhi]**

Year 2012

Very Short Answer Type Questions [2 Marks]

1) Name an organism which reproduces by spore formation. List three conditions favourable for spores to germinate and grow. **[All India]**
2) State the role of placenta in the development of embryo. **[All India]**
3) State one genetically different feature between sperms and eggs of humans. What is its consequence ? **[Delhi]**
4) List two advantages of vegetative reproduction practised in case of an orange plant. **[Delhi]**
5) List two advantages of practising vegetative propagation in plants. Select two plants raised by this method from the list given below :
   banana, gram, pea, rose, tomato, wheat **[Foreign]**
6) List the parts of human male reproductive system which contribute fluid to the semen. State two advantages semen offers to the sperms. **[Foreign]**

Short Answer Type Questions [3 Marks]

1) List and explain in brief three methods of contraception. **[All India]**
2) Explain the meaning of sexually transmitted diseases (STDs). Give two examples of STDs each, caused due to (i) bacterial infection and (ii) viral infection. State in brief how the spread of such diseases may be prevented. **[Delhi]**
3) What is AIDS ? Which microbe is responsible for AIDS infection ? State one mode of transmission of this disease. Explain in brief one measure for the prevention of AIDS. **[Foreign]**
4) (i) We see eyes in planaria, insects, octopus and vertebrates. Can eyes be grouped together in case of the above-mentioned animals to establish a common evolutionary origin ? Why ?
   (ii) State one evidence to prove that birds have evolved from reptiles. **[Foreign]**

5) With the help of a flow chart explain in brief how the sex of a new born is genetically determined in human beings. Which of the two parents, the mother or the father, is responsible for determination of sex of a child ? **[Foreign]**

Long Answer Type Questions [5 Marks]

1) Distinguish between unisexual and bisexual flowers giving one example of each. Draw a diagram showing process of germination of pollen grains on stigma and label the following parts :
(i) Female germ cell
(ii) Male germ cell
(iii) Ovary **[All India]**
2) Draw a diagram of human female reproductive system and label thepart
(i) that produces eggs.
(ii) where fusion of egg and sperm takes place.
(iii) where zygote is implanted.
What happens to human egg when it is not fertilised ? **[All India]**
3) Define the terms pollination and fertilisation. Draw a diagram of a pistil showing pollen tube growth into the ovule and label the following :pollen grain, male gamete, female gamete, ovary. **[Delhi]**
4) Describe in brief the role of (i) testis (ii) seminal vesicle, (iii) vas deferens,(iv) ureter and (v) prostate gland in human male reproductive system. **[Delhi]**
5) (i) Explain with the help of a diagram how pollen after landing on the stigma of a flower helps male germ cell to reach the female germ cell. Label the following : ovary, female germ cell, male germ cell and pollen grain.
(ii) State the meaning of pollination and mention a distinguishing feature between self-pollination and cross-pollination. **[Foreign]**
6) State in brief the changes that take place in a fertilized egg (zygote) till birth of the child in the human female reproductive system. What happens to the egg when it is not fertilized ?**[Foreign]**

Year 2011

Very Short Answer Type Questions [2 Marks]

1) List any, four reasons for vegetative propagation being practised in the growth of some type of plants. **[All India]**
2) Describe the role of fallopian tubes in the female reproductive system. **[All India]**
3) Write any two differences between binary fission and multiple fission in a tabular form as observed in cells of organisms. **[Delhi]**
4) Explain giving one example of each, the unisexual and the bisexual flowers. **[Delhi]**
5) What is vegetative propagation ? Write two of its advantages. **[Foreign]**
6) Explain the terms :
(i) Implantation of Zygote
(ii) Placenta **[Foreign]**

Short Answer Type Questions [3 Marks]

1) What does HIV stand for? Is AIDS an infectious disease? List any four modes of spreading AIDS. **[All India]**
2) Describe any three ways in which individuals with· a particular trait may increase in population. **[All India]**

3) (a) List two sexually transmitted diseases in each of the following cases :
   (i) Bacterial infections
   (ii) Viral infections
   (b) How may the spread of such diseases be prevented ? **[Delhi]**
4) Expand AIDS. List any four methods of prevention (control) of AIDS. **[Foreign]**
5) How is the sex of the child fixed during the fertilisation step in human beings ? Explain. **[Foreign]**

Long Answer Type Questions [5 Marks]

1) With the help of suitable diagrams, explain the various steps of budding in Hydra. **[All India]**
2) What is binary fission in organisms ? With the help of suitable diagrams, describe the mode of reproduction in Amoeba.**[All India]**
3) (a) Draw a diagram of the longitudinal section of a flower and label on it sepal, petal, ovary and stigma.
   (b) Write the names of male and female reproductive parts of a flower. **[Delhi]**
4) (a) What is fragmentation in organisms ? Name a multicellular organism which reproduces by this method.
   (b) What is regeneration in organism ? Describe regeneration in Planaria with the help of a suitable diagram. **[Delhi]**
5) (a) Draw a diagram illustrating fertilization in a flowering plant and label on it :
   Male germ cell, Ovary, Female germ cell and Pollen grain.
   (b) Distinguish between self pollination and cross pollination. **[Foreign]**
6) (a) What is spore formation ?
   (b) Draw a diagram showing spore formation in Rhizopus.
   (c) List two advantages for organisms to reproduce themselves through spores. **[Foreign]**

Year 2010

Very Short Answer Type Questions [2 Marks]

1) With the help of diagrams show the different stages of binary fission in Amoeba. **[Delhi]**

Short Answer Type Questions [3 Marks]

1) Write the full form of DNA. Name the part of the cell where it is located.Explain its role in the process of reproduction of the cell. **[Delhi]**

Year 2009

Very Short Answer Type Questions [1 Marks]

1) Why is DNA copying an essential part of the process of reproduction?**[All India]**

Very Short Answer Type Questions [2 Marks]

1) Draw a diagram of the longitudinal section of a flower and label on it(i) stigma and (ii) ovary. **[Foreign]**

Short Answer Type Questions [3 Marks]

1) Describe the role of the following in human beings :
   (i) Seminal vesicles
   (ii) Prostate gland **[All India]**

2) Explain how the sex of the child is determined at the time ofconception in human beings. **[All India]**
3) (a) Explain the terms :
(i) implantation (ii) placenta
(b) What is the average duration of human pregnancy ? **[Delhi]**

Long Answer Type Questions [5 Marks]

1) (a) Draw a sectional view of the human heart and label on it Aorta, Pulmonary arteries, Vena cava, Left ventricle.
(b) Why is double circulation of blood necessary in human beings ? **[All India]**
2) (a) Draw the structure of a nephron and label the following on it : Glomerulus, Bowman's capsule, Renal artery, Collecting duct.
(b) What happens to glucose that enters the nephron along with filtrate ? **[All India]**
3) (a) Draw a diagram of human alimentary canal and label on it :
Oesophagus, Gallbladder, Liver and Pancreas.
(b) Explain the statement, 'Bile does not contain any enzyme but it is essential for digestion. **[Delhi]**
4) (a) Draw a diagram of excretory system in human beings and label on it :
Aorta, vena cava, urinary bladder, urethra.
(b) List two vital functions of the kidney. **[Delhi]**