3. How Do Organisms Reproduce

Very Short Answer Type Questions-Pg-141

1. Question

Which life process ensures that a plant or animal species will not disappear from this earth?

Answer

Reproduction is an important life process which ensures that a plant or animal species does not disappear from this earth.

2. Question

What is the name of the reproductive process :

(a) which involves two parents?

(b) which involves only one parent ?

Answer

(a) In sexual reproduction, two parents are involved.

(b) In asexual reproduction, only one parent is involved.

3. Question

State whether the following statement is true or false :

Spores produced by the bread mould plant are actually its seeds.

Answer

This statement is false because spores produced by the bread mould plant are not its seeds.

4. Question

Most of the plants reproduce by sexual method. Name two plants which can reproduce asexually.

Answer

Hydra and plasmodium reproduce by asexually.

5. Question

Which type of reproduction:

(a) involves gametes ?

(b) does not involve gametes ?

Answer

(a) Sexual reproduction involves gametes.

(b) Asexual reproduction does not involve gametes.

6. Question

State whether human beings reproduce by sexual method or asexual method.

Answer

Human beings reproduce by sexual method.

7 A. Question

Name two animals which reproduce sexually.

Answer

Cows and dogs are reproduce sexually.

7 B. Question

Name two animals which reproduce asexually.

Answer

Hydra and planaria reproduce by asexually.

8. Question

Name one organism which reproduces by spore formation.'

Answer

Rhizopus fungus (Bread mould) reproduces by spore formation.

9. Question

Name the method by which Paramecium reproduces. Is this method sexual or asexual ?

Answer

Paramecium reproduces by binary fission. It is asexual method of reproduction.

10. Question

Name two plants :

(a) which can be grown from their broken sterns.

(b) which can be grown from their leaves.

Answer

(a) Bryophyllum and money plant can be grown from their broken sterns.

(b) Bryophyllum and Begonia can be grown from their leaves.

11. Question

Name the asexual method of reproduction in yeast.

Answer

Yeast reproduce by budding.

12. Question

Name the asexual method of reproduction in

(a) Hydra, and

(b) Plasmodium.

Answer

(a) Budding is asexual method of reproduction in hydra.

(b) Plasmodium reproduce by multiple fission.

13. Question

What is the name of asexual reproduction method in :

(l) Spirogyra, and (ii) Leishmania?

Answer

Fragmentation is found in spirogyra.

14. Question

Name the artificial propagation method used for the propagation of

(a) rose plants, and

(b) apple trees.

Answer

(a) Cutting is the method of artificial propagation which is used for the propagation of rose plants.

(b) Grafting is used for the propagation of apple trees.

15. Question

Which artificial propagation method is used for the production of jasmine plants ?

Answer

Layering is used for the propagation of jasmine plants.

16. Question

Name the natural method by which strawberry plants are propagated.

Answer

Strawberry plants are propagated by naturel layering method.

17. Question

Name two plants which are propagated by layering method.

Answer

Hibiscus and Bougainvillea plants are propagated by layering method.

18. Question

Name any two plants which are propagated by cuttings method.

Answer

Rose and grapes are two plants which are propagated by cuttings method.

19. Question

Write down the different methods of asexual reproduction.

Answer

The different methods of asexual reproduction are:

(i) Fission

(ii) Fragmentation

(iii) Regeneration

(iv) Budding

(v) Vegetative propagation

(vi) Spore formation

20. Question

Why are budding, fragmentation and regeneration, all considered to be asexual type of reproduction ?

Answer

Because in all these methods, only single parent takes part and forms new offsprings without using gametes.

21. Question

Fill in the following blanks with suitable words :

(a) The process of.....ensures continuity of life on earth.

(b) Plasmodium reproduces by the process of ..... fission whereas Paramecium reproduces by the process of ..... fission.

(c) Rose plants and sugar cane crop are usually grown by the ..... method.

(d) Vegetative reproduction of potato plants is done by using .....

(e) Strawberry plants are propagated by the natural..... method.

Answer

(a) reproduction

(b) multiple; binary

(c) cuttings

(d) tubers

(e) layering

Short Answer Type Questions-Pg-141

22 A. Question

What is the basic difference between asexual reproduction and sexual reproduction?

Amoeba, Cats, Humans, Hydra, Birds

Answer

Difference between asexual reproduction and sexual reproduction-

Asexual reproduction	Sexual reproduction
In this type of reproduction, the offspring arises from a single parent.	The offspring arises from two parents of different sexes.
Example: Hydra, Amoeba, etc.	Example: Frog, human beings, etc.

22 B. Question

Which of the following organisms reproduce by sexual method and which by asexual method ?

Amoeba, Cats, Humans, Hydra, Birds

Answer

Sexual method: Cats, humans, birds

Asexual method: Amoeba and Hydra

23 A. Question

What is meant by regeneration ? Name two animals which can regenerate fully from their cut body parts

Answer

The process of getting back a full organism from its body parts is called regeneration. Planaria and hydra are two organisms which can be regenerated fully from their body parts.

23 B. Question

Explain why, more complex multicellular organisms cannot give rise to new organisms through regeneration.

Answer

Multicellular organisms have a high degree of specialized organization in their body. In their body, multiple cells make tissue, tissues make organs and organs make organ system and finally many organ systems makeup an

organism. So, more complex multicellular organisms cannot be reproduced from their cut body parts by regeneration.

24. Question

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

Answer

Vegetative propagation is the method of asexual reproduction in which new plants are produced from the vegetative parts of the plant like stems, roots and leaves. Example: Bryophyllum plant reproduces from its leaves and money plant grows from its stem.

Advantages of vegetative propagation are:

•Plants grow faster by the process of vegetative propagation.

• All plants produced are genetically similar to the parent plant.

25 A. Question

What is meant by the term 'artificial propagation of plants' ?

Answer

The process of growing many plants from one plant by man-made methods is called artificial propagation of plants.

25 B. Question

Name three common methods which are used for the artificial propagation of plants.

Answer

The threes methods of artificial vegetative propagation are:

(i) Cutting (ii) Layering and (iii) Grafting

25 C. Question

Name two plants which are usually propagated by artificial propagation methods. Name the method of artificial propagation used in each case.

Answer

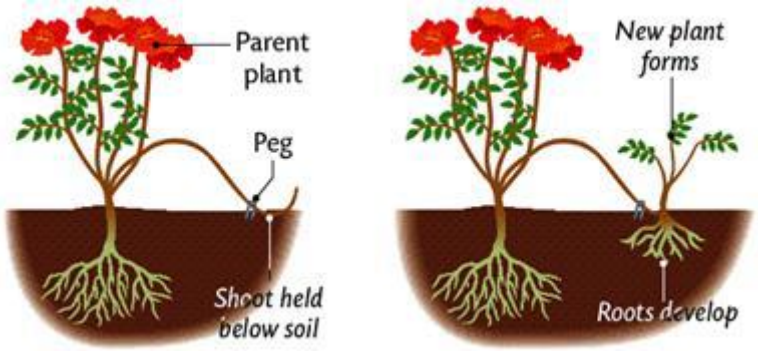
(i) Grapes grow by means of cutting. (ii) Jasmine grows by means of layering

26. Question

Describe the layering method for the artificial propagation of plants. Illustrate your answer with the help of a labelled diagram. Name any five plants which are propagated by the layering method.

Answer

In this method, one of the lower branch of the plant is bent and covered partially with moist soil. After some time, new roots develop from the part of the branch buried in the soil. The branch is then cut off from the parent plant. It grows into a new plant.



The layering method is used for the propagation of plants like Jasmine, Strawberry, Raspberry, Lemon and Guava.

27 A. Question

What is meant by the term 'fission' as used in biology ?

Answer

Splitting of an organism into two new organisms is called fission.

27 B. Question

How does binary fission differ from multiple fission ?

Answer

Difference between binary fission and multiple fission:

Binary Fission	Multiple fission
Splitting of unicellular organism like Amoeba into two equal halves during cell division is called binary fission.	Division of single-celled organism like Plasmodium into many daughter cells simultaneously is called multiple fission.

27. Question

Name one organism which reproduces by binary fission and another which reproduces by multiple fission.

Answer

Binary fission: Amoeba;

Multiple fission: Plasmodium

27. Question

State whether the above named organisms are animals or plants.

Answer

These are microscopic animals.

28 A. Question

Can you consider cell division as a type of reproduction in unicellular organisms ? Give reason.

Answer

We consider cell division as a type of reproduction in unicellular organism because it leads to the formation new cells.

28 B. Question

What is a clone ? Why do off springs formed by asexual reproduction exhibit remarkable similarity ?

Answer

The organisms which are produced asexually are genetically identical to the parent and are called clones. The basic event in the reproduction is the creation of DNA copy. The replication of DNA occurs by certain biochemical reactions which synthesize more of genetic material. When the DNA already present in the nucleus of the parent cell is replicated by making more DNA at the time of asexual reproduction then slight variations come in the two copies formed. Due to this the two DNA molecules formed will be similar but not identical.

29 A. Question

The yeast cells fail to multiply in water but they multiply rapidly in sugar solution. Give one reason for it.

Answer

Yeast cells fail to multiply in water because water does not provide any energy to yeast cells. Whereas in sugar solution, they multiply rapidly because sugar provide energy to carry out reproduction.

29 B. Question

Why does bread mould grow profusely on a moist slice of bread but not on a dry slice of bread ?

Answer

Moisture is necessary for the growth of bread mould. The bread mould grows profusely on moist slice of bread because it provides both moisture and nutrients for growth. The dry slice of bread provides nutrients but no moisture. So, bread mould does not grow on the dry slice of bread.

30 A. Question

What is a tuber? Name one stem tuber and one root tuber.

Answer

Tuber is an enlarged structure in some plant used as storage organ for nutrients.

Stem tuber : Potato ;

Root tuber : Sweet potato

30 B. Question

What is name of the organ of propagation present in a tuber?

Answer

This is called eyes. Each eye of potato can give rise to a new potato plant.

30 C. Question

Name one commonly used vegetable which is propagated by using tubers.

Answer

The vegetable which is propagated by using tubers is potatoes.

31 A. Question

What is meant by vegetative propagation ?

Answer

Vegetative propagation is the method of asexual reproduction in which new plants are produced from the vegetative parts of the plant like stems, roots and leaves.

31 B. Question

Vegetative propagation involves the growth and development of 'something' present in the old part of the plant to form a new plant. What is this 'something'?

Answer

Vegetative propagation involves the growth and development of buds present in the old part of the plant to form a new plant.

31 C. Question

Why do green grass plants spring up in dry fields on their own after the rains ?

Answer

Dry fields have dry stems of old grass all over which contains buds in an inactive state. During the rains, these buds get rain water and become active to produce new grass plants.

32 A. Question

Explain how, new Bryophyllum plants can be produced from the leaves of the old plant ? Illustrate your answer with the help of a labelled diagram.

Answer

Bryophyllum can be reproduced by vegetative propagation by using either a piece of its stem or leaves. The leaves of a Bryophyllum have special buds on their margins which may fall on the soil and develop into new plant.

Leaf of Bryophyllum with buds

32 B. Question

How can you grow money plant by vegetative propagation ?

Answer

Money plant can be grown by vegetative propagation by using a piece of its stem which contains at least one leaf on it. It is dipped into the water and after a few days new roots appear at the point where the leaf was attached. This piece of stem grows gradually into a new money plant.

33. Question

Match the organisms given in column I with the methods of reproduction/propagation given in column II:

Column I	**Column II**

(i) Plasmodium	(a) Spore formation
(ii) Spirogyra	(b) Leaves
(iii) Jasmine	(c) Regeneration
(iv) Apple tree	(d) Budding
(v) Bryophyllum	(e) Binary fission
(vi) Potatoes	(j) Layering
(vii) Rhizopus	(g) Fragmentation
(viii) Hydra	(h) Tubers
(ix) Planaria	(i) Cuttings
(x) Leishmania	(j) Multiple fission
(xi) Sugar cane	(k) Grafting
(xii) Rose	

Answer

(i) j (ii) g (iil) f (iv) k (v) b (vi) h (vii) a (viii) d (ix) c (x) e (xi) i (xii) i

Long Answer Type Questions-Pg-142

34 A. Question

What is meant by reproduction?

Answer

The process by which living beings produce its own like is called reproduction.

34 B. Question

What are the two general methods of reproduction in organisms?

Answer

There are two methods of reproduction:

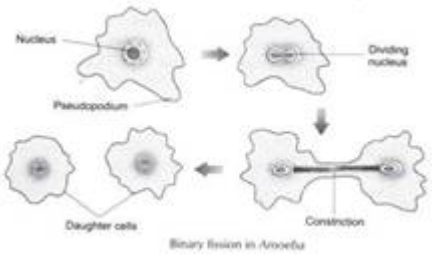
(i) Sexual reproduction (ii) Asexual Reproduction

34 C. Question

How does an Amoeba reproduce ? Describe the process of reproduction in Amoeba with the help of labelled diagrams of different stages in its reproduction process.

Answer

Amoeba reproduces by common asexual method called binary fission. In this method, Amoeba cell divides into two equal daughter cells. The nucleus of amoeba first divides into two parts. After that the cytoplasm of amoeba divides into two parts, one part around each nucleus. This leads to the formation of the two daughter Amoebae cell having a nucleus and its own cell organelles.



34 D. Question

What is the name of the process by which Amoeba reproduces ?

Answer

Amoeba reproduces by binary fission.

34 E. Question

Name two organisms which reproduce by the same asexual process as that of Amoeba.

Answer

Paramecium and Leishmania reproduce by binary fission.

35 A. Question

What is the difference between the two asexual methods of reproduction : fission and fragmentation?

Answer

Differences between the fission and fragmentation:

Fission	Fragmentation
It is a process in which an organism splits to form two or more new organisms.	It is a process in which the body breaks up into two or more pieces on maturing, each of which subsequently grows to form a complete new organism.
It occurs in unicellular organisms. Example: Amoeba.	It occurs in multicellular organisms. Example: Spirogyra.

35 B. Question

Name one organism which reproduces by fission and another which reproduces by fragmentation.

Answer

Fission: Amoeba; Fragmentation: Spirogyra

35 C. Question

What is meant by multiple fission ? Name one organism which reproduces by the process of multiple fission.

Answer

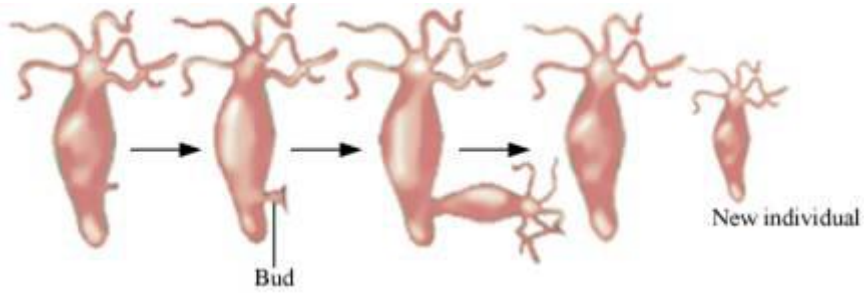
Division of single-celled organism into many daughter cells simultaneously is called multiple fission. Plasmodium reproduces by multiple fission.

35 D. Question

Describe the process of reproduction in Hydra with the help of labelled diagrams. What is the name of this process of reproduction ?

Answer

Hydra reproduces by budding. In hydra, a bud develops as an outgrowth due to repeated cell divisions at one specific site. This bud then grows gradually to form a small hydra by developing a mouth and tentacles. The tiny new hydra detaches itself from the parent body and become new independent individual.



35 E. Question

Name one unicellular organism which reproduces by the same asexual process as Hydra.

Answer

Yeast reproduces by buding.

36 A. Question

Name the method by which bread mould (Rhizopus fungus) reproduces. Is this method sexual or asexual ?

Answer

Rhizopus fungus (bread mould) reproduces by spore formation. It is asexual method of reproduction.

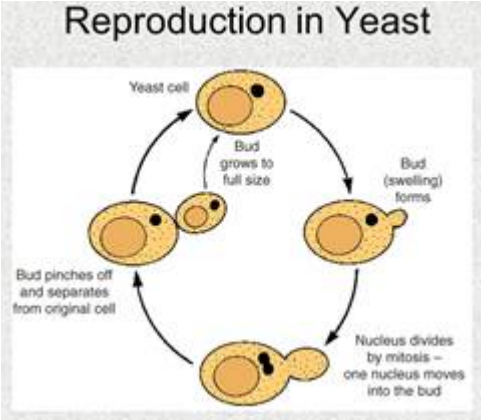
36 B. Question

What is yeast? Describe the process of reproduction in yeast with the help of labelled diagrams.

Answer

Yeast is a tiny, unicellular non-green plant which reproduces by an asexual method called budding.

In yeast, first a bud appears on the outside of the cell wall. The nucleus of the parent cell divides into two parts and one part of the nucleus moves into the bud. Ultimately, the bud separates off from the parent cell and forms a new yeast cell



36 C. Question

Name a tiny fresh-water animal which reproduces by the same method as that of yeast ? What is this method known as ?

Answer

Hydra is a tiny fresh water animal which also reproduces by budding.

36 D. Question

Name two marine organisms which also reproduce by the same method as yeast but form colonies.

Answer

Corals and sponge are two marine organisms which also reproduce by the same method as yeast but form colonies.

37 A. Question

What is meant by 'grafting' as a means of propagation in plants?

Answer

Grafting - It is a method of artificial propagation in which the cut stems of two different plants (one with roots and other without roots) are joined together in such a way that the stems join and grow as a single plant.

37 B. Question

Define 'stock' and 'scion'.

Answer

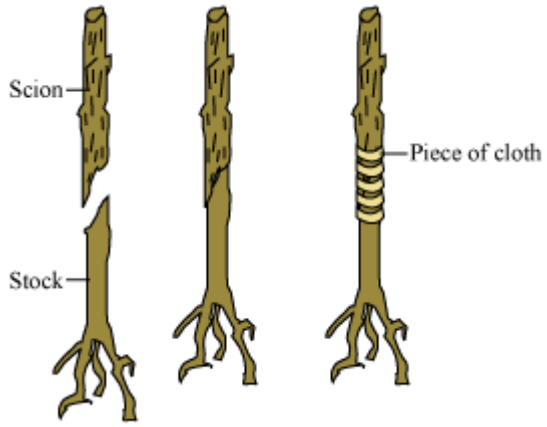
The cut stem of a plant having roots (and fixed in soil) is called stock and the cut stem of another plant (without roots) is called scion.

37 C. Question

Describe the grafting method for the artificial propagation of plants with the help of labelled diagrams.

Answer

In grafting method, two plants are chosen which are used as scion and stock. First the stem (or branch) is cut from the plant chosen to be made scion by giving a slanting cut. The stem of second plant is also in a slanting way. The lower part of this plant is stock. The scion is placed over the stock and is fitted together by binding tightly by a piece of cloth or plastic sheet. The cut soon heals and the stock and scion of two plants grow together to become one plant.



37 D. Question

Name two fruit trees which are usually propagated by grafting method.

Answer

Apple and oranges are propagated by grafting method.

37 E. Question

State two advantages of grafting method of artificial propagation of plants.

Answer

Advantages of grafting method:

(i) It can be used to produce varieties of seedless fruits.

(ii) It enables us to combine the most desirable characteristics of the two plants in its flowers and fruits.

37 F. Question

What is the difference between the cuttings method and grafting method for the artificial propagation of plants?

Answer

Difference between the cuttings method and grafting method:

Cutting Method	Grafting Method
In this method, a small part of the plant is removed by making a cut with a sharp knife.	In this method, the cut stems of two different plants (one with roots and other without roots) are joined together in such a way that the stems join and grow as a single plant.
The new plant formed is exactly similar to the parent plant.	The new plant produced has the characteristics of both the parent plants.

38 A. Question

What is tissue culture ?

Answer

Tissue culture is a technique of artificial propagation of plant. It is done by taking a small piece of plant tissue (or cells) removed from the growing tips of a plant and grow it in suitable growth medium.

38 B. Question

Name any four types of ornamental plants which are being produced by tissue culture technique.

Answer

Orchids, dahlia, carnation and chrysanthemum are produced by tissue culture technique.

38 C. Question

What is the importance of DNA copying in reproduction? Explain with an example.

Answer

The chromosomes are located in the nucleus of a cell and they contain information for the inheritance of traits from the parents to the next generation in the form of DNA molecules so the characteristics of a parent organism are transmitted to their off springs. DNA is the information source for making proteins. If information is different, different protein will be made that lead to altered body design.

Example: Offspring's produced by asexual reproduction have slight variations from their parents.

38 D. Question

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

Answer

Individual organisms of a species get some variations by the process of reproduction which makes them survive adverse environmental conditions (heat, cold etc.). Thus, variations during reproduction gives stability to a species.

38 E. Question

Why is variation during reproduction beneficial to the species but not necessarily for the individual?

Answer

Variation is useful for the survival of species than individuals because sometimes for a species, the environmental conditions change so drastically that their survival becomes difficult. If all the organisms of a population are living in a particular habitat, then there is a danger that all of them may die and no one would survive under drastic conditions. Only few variants which are resistant to these drastic changes would be able to survive. However, if these variants were not there, then the entire species of that organism would have been destroyed. Thus, variation is useful to species but not the individual.

39 A. Question

What is a 'cutting' in respect of plants for propagation purposes?

Answer

In this method, a small part of the plant is removed by making a cut with a sharp knife.

39 B. Question

What care should be taken while making a cutting from a plant?

Answer

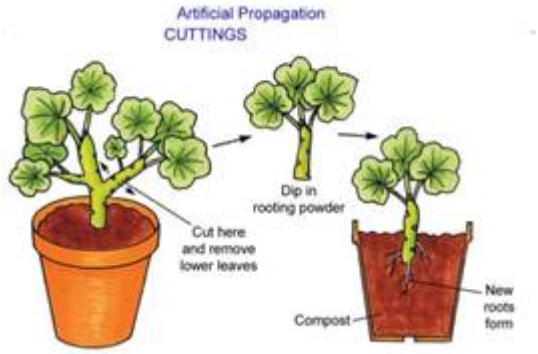
While cutting, care should be taken to see that there are some buds on it.

39 C. Question

Describe the cuttings method for the artificial propagation of plants. illustrate your answer with the help of labelled diagrams.

Answer

In this method, a parent plant is cut in a way that the cut part has buds and the lower part is buried in the moist soil. After a couple of days, the cut part develops roots and shoot and a new similar plant grows.



39 D. Question

Name any two plants which are usually propagated by the cuttings method.

Answer

Rose and Bougainvillea are propagated by cutting method.

Multiple Choice Questions (MCQs)-Pg-143

40. Question

Asexual reproduction is :

A. a fusion of specialised cells

B. a method by which all types of organisms reproduce

C. a method producing genetically identical offspring

D. a method in which more than one parent are involved

Answer

In asexual reproduction, only single parent is involved. It is primitive type of reproduction. Off springs are the identical copies of the parent.

41. Question

One of the following organisms does not reproduce by binary fission. This is:

A. Amoeba

B. Plasmodium

C. Leishmania

D. Paramecium

Answer

Amoeba, Leishmania and paramecium reproduce by binary fission whereas plasmodium reproduces by multiple fission.

42. Question

The micro-organism which reproduces by multiple fission is the one which causes the disease known as:

A. Kala-azar B. marasmus

C. malaria D. amoebiasis

Answer

Plasmodium reproduces by multiple fission and cause malaria disease in humans.

43. Question

The protozoan having a flagellum at its one end is :

A. Amoeba B. Paramecium

C. Hydra D. Leishmania

Answer

Leishmania is a protozoan which have a flagellum at its one end.

44. Question

In the list of organisms given below, those which reproduce by the asexual method are:

(i) banana (ii) yak

(iii) yeast (iv) Amoeba

A. (ii) and (iv)

B. (i), (iii) and (iv)

C. (i) and (iv)

D. (ii), (iii) and (iv)

Answer

Banana, yeast and amoeba reproduce by asexually. Banana reproduce by vegetative propagation; yeast reproduces by budding and; Amoeba reproduces by binary fission.

45. Question

One of the following organisms does not reproduce by budding . This is :

A. Sponge B. Yeast

C. Hydra D. Planaria

Answer

Sponge, yeast and hydra reproduce by budding whereas planaria reproduces by regeneration.

46. Question

The disease kala-azar is caused by a micro-organism known as :

A. Planaria B. Leech

C. Leishmania D. Plasmodium

Answer

Leishmania is a micro-organism which causes a disease called kala-azar.

47. Question

Reproduction is essential for living organisms in order to :

A. keep the individual organ alive

B. fulfil their energy requirements

C. maintain growth

D. continue the species for ever

Answer

Reproduction is one of the important characteristics of living things. The ability of organism to produce young ones of its own kind is called reproduction. It is essential for the continuity of species.

48. Question

The unicellular organism which reproduces by budding is :

A. Spirogyra B. Hydra

C. Planaria D. Yeast

Answer

Yeast is a unicellular organism which reproduces by budding. Spirogyra reproduces by fragmentation; planaria reproduces by regeneration and; hydra (a multicellular organism) reproduces by budding.

49. Question

A multicellular organism which reproduces by budding is :

A. Amoeba B. Yeast

C. Leishmania D. Hydra

Answer

Hydra is a multicellular organism which reproduces by budding whereas Yeast is a unicellular organism reproduces by budding.

50. Question

The off springs formed by asexual reproduction method have greater similarity among themselves because :

(i) asexual reproduction involves only one parent

(ii) asexual reproduction involves two parents

(iii) asexual reproduction involves gametes

(iv) asexual reproduction does not involve gametes

A. (i) and (ii) B. (i) and (iii)

C. (ii) and (iv) D. (i) and (iv)

Answer

The off springs formed by asexual reproduction method have greater similarity among themselves because in asexual reproduction, only one parent is involved without forming gametes.

51. Question

A simple multicellular animal having tentacles which lives in freshwater usually reproduces by the asexual process of:

A. binary fission B. spore formation

C. budding D. fragmentation

Answer

A simple multicellular animal (Hydra) having tentacles which lives in freshwater usually reproduces by the asexual process of budding.

52. Question

One of the following does not reproduce by spore formation method. This is:

A. Rhizopus fungus

B. Penicillium fungus

C. Yeast fungus

D. Mucor fungus

Answer

Rhizopus, penicillium and mucor fungus reproduce by spore formation method whereas yeast reproduces by budding.

53. Question

The factors responsible for the rapid spreading of bread mould on slices of bread are :

(i) presence of large number of spores in air

(ii) presence of large number of thread-like branched hyphae

(iil) presence of moisture and nutrients

(iv) formation of round shaped sporangia

A. (i) and (iii) B. (ii) and (iv)

C. (i) and (ii) D. (iii) and (iv)

Answer

The factors responsible for the rapid growth of bread mould on slices of bread are presence of large number of spores in air as well as presence of moisture and nutrients on the slice of bread.

54. Question

One of the following reproduces by forming spores. This in :

A. Fern B. Planaria

C. Spirogyra D. Potato

Answer

Fern reproduces by forming spores.

55. Question

Asexual reproduction through budding takes place in:

(i) Amoeba and Yeast

(ii) Yeast and Hydra

(iii) Hydra and Plasmodium

(iv) Corals and Sponges

A. (i) and (ii) B. only (ii)

C. (i) and (iii) D. (ii) and (iv)

Answer

Hydra and yeast reproduce by budding. Coral and sponges are two marine organism which also reproduce by budding.

56. Question

A feature of reproduction that is common to Amoeba, Yeast and Bacterium is that:

A. they are all multicellular

B. they are all unicellular

C. they reproduce only sexually

D. they reproduce asexually

Answer

Amoeba, yeast and bacterium reproduce by asexually. Amoeba reproduce by binary fission, yeast reproduces by budding and bacterium reproduces by multiple fission.

57. Question

One of the following organisms does not reproduce by fission. This is :

A. Amoeba B. Leishmania

C. Planaria D. Plasmodium

Answer

Simple organisms like hydra and planaria are capable of producing new individual through the process of regeneration.

58. Question

An organism which may be considered to be a kind of plant and reproduces by budding is :

A. Paramecium B. Bread mould

C. Hydra D. Yeast

Answer

Yeast is a unicellular organism which may be considered to be a kind of a plant and reproduces by budding.

59. Question

An animal which reproduces by the process of budding is :

A. Plasmodium B. yeast

C. Hydra D. Planaria

Answer

Hydra is a multicellular organism which reproduces by budding.

60. Question

In Spirogyra, asexual reproduction takes place by :

A. division of a cell into two cells

B. breaking up of filaments into smaller bits

C. division of a cell into many cells

D. formation of a large number of buds

Answer

In spirogyra algae, the plant body breaks up into smaller fragments. Each fragment grows into a new individual.

61. Question

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

A. budding

B. fragmentation

C. binary fission

D. multiple fission

Answer

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

62. Question

In Rhizopus fungus, the fine thread-like structures spread on the whole surface of slice of bread are called :

A. rhizoids

B. stems

C. roots

D. hyphae

Answer

In Rhizopus fungus, the fine thread-like structures spread on the whole surface of slice of bread are called hyphae.

63. Question

Vegetative propagation refers to the formation of new plants from the following existing organs of the old plants:

A. stems, roots and flowers

B. stems, roots and leaves

C. stems, flowers and fruits

D. stems, leaves and flowers

Answer

Vegetative propagation is the method of asexual reproduction in which new plants are produced from the vegetative parts of the plant like stems, roots and leaves.

64. Question

The two organisms which can regenerate fully from their cut body parts are :

A. Paramecium and Hydra

B. Hydra and Amoeba

C. Planaria and Leishmania

D. Hydra and Planaria

Answer

Planaria and Leishmania are two organisms which can regenerate fully from their cut body parts.

65. Question

The two types of organisms which produce colonies by the process of budding are :

A. Hydra and Corals

B. Yeast and Sponges

C. Corals and Sponges

D. Hydra and Yeast

Answer

Corals and Sponges are two organisms which reproduce by budding and form colonies.

66. Question

Spore formation is the most common asexual method of reproduction in :

A. protozoa

B. tubers

C. fungi

D. algae

Answer

Bread mould (a fungus) reproduces by the asexual method called spore formation.

67. Question

An alga which reproduces by the asexual reproduction method called fragmentation is:

A. Rhizopus

B. Salmonella

C. Plasmodium

D. Spirogyra

Answer

Spirogyra an alga which reproduces by the asexual reproduction method called fragmentation.

68. Question

The organisms which can reproduce by fragmentation are :

A. Corals and Sponges

B. Corals and Spirogyra

C. Sea anemone and Spirogyra

D. Sponges and Sea anemones

Answer

Sea anemone and Spirogyra reproduce by the asexual method called fragmentation.

69. Question

Binary fission describes the type of reproduction where the organism divides to form:

A. many spores

B. two daughters

C. many buds

D. two hyphae

Answer

In binary fission, organism cell divides into two equal daughter cells. The nucleus of organism first divides into two parts. After that the cytoplasm divides into two parts, one part around each nucleus. This leads to the formation of the two daughter cells having a nucleus and its own cell organelles.

70. Question

The cut part of a plant stem (without roots) which is used in grafting is called :

A. stock

B. stump

C. scion

D. graft

Answer

The cut part of a plant stem (without roots) which is used in grafting is called scion.

71. Question

The cut part of plant stem (having roots and fixed to ground) which is used in the process of grafting is known as:

A. stock

B. scion

C. cutting

D. bud

Answer

The cut part of plant stem (having roots and fixed to ground) which is used in the process of grafting is known as stock.

72. Question

Multiple fission occurs in one of the following. This is :

A. bread mould

B. kala-azar parasite

C. flatworm

D. malaria parasite

Answer

Plasmodium which causes malaria reproduces by multiple fission.

73. Question

An organism having a whip-like structure at one end which reproduces by the process of binary fission is:

A. Hydra

B. Paramecium

C. Leishmania

D. Plasmodium

Answer

Leishmania have a whip-like structure at one end and reproduces by the process of binary fission.

74. Question

A tiny animal having tentacles which reproduces by growing buds on the sides of its body is :

A. Planaria

B. Yeast

C. Amoeba

D. Hydra

Answer

Hydra reproduces by budding. In hydra, a bud develops as an outgrowth due to repeated cell divisions at one specific site. This bud then grows gradually to form a small hydra by developing a mouth and tentacles. The tiny new hydra detaches itself from the parent body and become new independent individual.

75. Question

An organism which can reproduce by two asexual reproduction methods one similar to the reproduction in yeast and the other similar to the reproduction in Planaria is :

A. Spirogyra

B. Bryophyllum

C. Hydra

D. Sea anemone

Answer

Hydra reproduces by two asexual reproduction methods. One is budding similar to the reproduction in yeast and the other is regeneration similar to the reproduction in Planaria.

76. Question

Stock and scion are involved in the artificial propagation method known as :

A. tissue culture

B. layering

C. grafting

D. cuttings

Answer

Grafting is a method of artificial propagation in which the cut stems of two different plants (one with roots and other without roots) are joined together in such a way that the stems join and grow as a single plant. The cut stem of a plant having roots (and fixed in soil) is called stock and the cut stem of another plant (without roots) is called scion.

77. Question

In asexual reproduction, two offsprings having the same genetic material and the same body features are called:

A. callus

B. twins

C. clones

D. chromosomes

Answer

In asexual reproduction, two offsprings having the same genetic material and the same body features are called clones.

78. Question

The method of asexual reproduction in plants in which callus is produced is :

A. micropropagation

B. vegetative propagation

C. regeneration

D. fragmentation

Answer

The method of asexual reproduction in plants in which callus is produced is micropropagation.

79. Question

A Planaria worm is cut horizontally in the middle into two halves P and Q such that the part P contains the whole head of the worm. Another Planaria worm is cut vertically into two• halves R and S in such a way that both the cut pieces R and S contain half head each. Which of the cut pieces of the two Planaria worms could regenerate to form the complete respective worms ?

A. only P

B. only R and S

C. P, Rand S

D. P, Q, R and S

Answer

If the body of planaria is cut into any number of pieces, each piece grows into a complete organism through the process of regeneration.

Questions Based on High Order Thinking Skills (HOTS)-Pg-145

80. Question

There are four tiny organisms A, B, C and D. The organism A is a parasitic protozoan which causes a disease known as kala-azar. The organism B is a microscopic single-celled animal which causes malaria disease in human beings. The organism C is a unicellular animal which can change its body shape according to need, it has no fixed shape. The organism D is also a unicellular animal which is slippet-shaped having a large number of tiny hair all around its body.

(a) Name the organisms A, B, C and D

(b) Name one characteristic body feature of organism A.

(c) Name the insect which carries organism Band transmits it from one person to another.

(d) What name is given to the asexual method of reproduction of

(i) organism A, and (ii) organism B?

(e) Where do organisms C and D live?

Answer

(a) A is Leishmania, B is Plasmodium, C is Amoeba and D is Paramecium.

(b) Leishmania (A) has a whip-like structure called flagellum at its one end.

(c) Female Anopheles mosquitocarries plasmodium (B) and transmits it from person to person.

(d) (i) Leishmania (A) reproduces by binary fission. (ii) Plasmodium (B) reproduces by multiple fission.

(e) Amoeba (C) and Paramecium (D) live in pond water.

81. Question

Two very small organisms X and Y both reproduce by the method of budding. Organism X is industrially very important because it is used in making alcohol from sugar. It is also used in making bread. Organism Y lives in freshwater. If organism Y gets cut into a number of parts accidently, each cut part can grow to form complete organism.

(a) What are organisms X and Y ?

(b) What is the name of the process in which X converts sugar into alcohol ?

(c) To which class of organisms does X belong?

(d) Name an important body feature of organism Y.

(e) Which organism is multicellular and which one is unicellular?

Answer

(a) X is yeast and Y is hydra.

(b) The process by which sugar converts into alcohol is fermentation.

(c) Yeast (X) belongs to class fungi.

(d) Hydra (Y) has tentacles that wave in the water.

(e) Yeast (X) is unicellular and Hydra (Y) is multicellular.

82. Question

When a moist slice of bread was kept aside for a few days then some organism grew on it to form a white cottony mass which later turned black. When this slice of bread was observed through a magnifying glass, then fine thread-like projections and thin stems having bulb-like structures at the top were seen.

(a) What is the common name and scientific name of the organism which grew on the moist slice of bread ?

(b) How did this organism grow on the moist slice of bread automatically?

(c) What are the fine, thread-like projections on the surface of slice of bread known as ?

(d) What name is given to the knob-like structures and what do they contain ?

(e) What is the name of this method of reproduction ?

(f) Name one unicellular organism which reproduces by this method.

(g) Name two non-flowering plants which reproduce by this method.

Answer

(a) Common name-Bread mould; Scientific name-Rhizopus fungus

(b) Spores of rhizopus fungus (bread mould) are always present in air. These air-borne spores landed on moist slice of bread, under favorable conditions like presence of moisture, nutrients and warmth, they grew and produced new individuals.

(c) The fine, thread-like projections on the surface of slice of bread are known as hyphae.

(d) The knob-like structures are called sporangia and they contain spores.

(e) It is type of asexual reproduction method called spore formation.

(f) Bacteria (unicellular organism) reproduces by this method.

(g) Ferns and Mosses are two non-flowering plants which reproduce by spore formation.

83. Question

A scientist removed some cells from the growing point of a plant and placed it in a suitable medium leading to the formation of a shapeless lump of mass X. X is then transferred to another medium which stimulates it to develop roots. When X with developed roots is placed in a yet another medium, then it develops shoots to form tiny plantlets. These plantlets can then be transplanted in pots or soil where they can grow to form mature plants.

(a) What is the shapeless lump of mass X known as ?

(b) What name is given to this method of producing new plants ?

(c) The growth medium used in this method contains plant nutrients in the form of a 'jelly'. Name this jelly.

(d) What is the general name of chemicals used to stimulate the growth of plant cells and development of roots and shoots?

(e) Name any two plants which are produced by this method.

(f) State any two advantages of this method of producing plants.

(g) What is the other name of this method [other than that given in (b) above] ?

Answer

(a) The shapeless lump of mass (X) is known as callus.

(b) This method is known as tissue culture.'

(c) The growth medium used in this method contains plant nutrients in the form of a 'jelly'. This jelly is known as agar.

(d) The general name of chemicals used to stimulate the growth of plant cells and development of roots and shoots is known as plant hormones.

(e) Dahlia and Carnation

(f) Advantages: (i) The new plants produced by tissue culture are disease free.

(ii) Tissue culture can grow plants round the year, irrespective of weather or season.

(g) The other name of tissue culture is micropropagation.

84. Question

The stem of a fruit tree X fixed in soil is cut in a slanting way. The upper part of stem of another fruit tree Y of different variety of same species is also cut in a slanting way. The cut stem of tree Y, without roots but having some

leaves, is placed over the rooted cut stem of tree X in such a way that their cut surfaces fit together properly. While joining the two cut stems, care is taken to make sure that the layer Z of one cut stem is in contact with layer Z of the other cut stem. The joint of cut stem is bound tightly with a piece of cloth and covered properly with polythene. Soon the cut heals and the two stems grow together and become one fruit tree producing leaves, flowers and fruits.

(a) What is the name of this method of producing plants or trees ?

(b) What name is given to the cut stem of tree X having roots?

(c) What name is given to the cut stem of tree Y which has no roots but has some leaves ?

(d) Name the layer Z.

(e) Why should the layer Z of one cut stem be in contact with the layer Z of the other cut stem ?

(f) Name y four fruit trees which are usually bred by this technique.

(g) State any one advantage of producing fruit trees by this technique.

Answer

(a) The method of producing plants or trees is known as grafting.

(b) The cut stem of a plant having roots and fixed in soil is called stock.

(c) The cut stem of plant which has no roots but has some leaves is called scion.

(d) Z is cambium layer.

(e) The layer Z called cambium layer of one stem be in contact with the layer of the other cut stem because cambium layer in the stem is responsible for growth.

(f) Peach, apple, apricot and pear trees are usually bred by the grafting method.

(g) Advantage: It enables us to combine the most desirable characteristics of the two plants in its flowers and fruits.

85. Question

A small part of the shoot of a plant is removed with a sharp knife. When the lower end of this small part of the shoot is buried in moist soil, it gradually develops roots and shoots and grows to become a new plant.

(a) What is the name of this method of propagating plants?

(b) What care should be taken while removing a small part of the shoot from the parent plant with a knife?

(c) Name any two plants which provide us with food directly or indirectly and are grown by this method.

(d) Give one advantage of this method of producing new plants.

(e) State whether it is a sexual method of reproduction or an asexual method. Why?

(f) What special name can be given to the genetically identical new plants produced by this technique?

Answer

(a) It is cutting method for propagation of plants.

(b) While cutting, care should be taken to see that there are some buds on it.

(c) Sugarcane and banana are two plants which provide us with food directly or indirectly and are grown by cutting method.

(d) By using the cuttings method, we can produce many new plants from just one plant quickly, without waiting for flowers and seeds.

(e) Cutting method is an asexual method because only single parent involved in it without forming gametes.

(f) Clones.

86. Question

When the branches of a plant growing in the field are pulled towards the ground and a part of them is covered with moist soil (leaving the tips of the branches exposed above the ground), then after some time new roots develop from the parts of branches buried in the soil. On cutting these branches from the parent plant, new plants are produced from the cut parts of branches which had developed roots.

(a) What is this method of propagation of plants known as ?

(b) What type of branches should a plant have to be able to be propagated by this method ?

(c) Name any two plants which are grown for their flowers and propagated by this method.

(d) Name any two plants which are grown for their fruits and propagated by this method

(e) Name one plant which gets propagated by this method naturally by forming runners (soft horizontal stems running above the ground).

Answer

(a) This method of propagation of plants is known as layering.

(b) Slender branches (Thin branches)

(c) Jasmine and China rose plants are grown for their flowers and propagated by layering method.

(d) Lemon and guava plants are grown for their fruits and propagated by layering method.

(e) Strawberry plant reproduces naturally by layering method by forming runners (soft horizontal stems running above the ground).

87. Question

A worm X found in freshwater and slow-moving streams has been accidently cut into three pieces. It was observed that in due course of time, each cut piece of the worm develops to become a complete worm by growing all the missing parts.

(a) Name the worm X which can exhibit this phenomenon of making complete worm from its cut body parts.

(b) Name another organism Y which possesses the same characteristic of growing fully from its cut body parts.

(c) What is the name of this process in which a complete organism is formed from its cut body part.

(d) State whether X and Y are unicellular and/or multicellular organisms.

(e) Can a dog be produced completely from its cut body part (say, a cut tail) just like organisms X and Y ? Why?

Answer

(a) Worm (X) is planaria.

(b) Organism (Y) is hydra.

(c) Regeneration is the process in which a complete organism is formed from its cut body part.

(d) X and Y are simple multicellular organisms.

(e) No, dog cannot be produced completely from its cut body part because dog is a complex multicellular organism.

88. Question

A thickened underground stem X of a plant which is swollen with stored food has a number of points Y on its surface. When the old stem X is planted in the soil of a field in the next growing season, then each point Y present on its surface grows into a new plant.

(a) What is the general name of the underground stems like X?

(b) Give one example of X.

(c) What are points Y present on X known as?

(d) Is it necessary to plant the whole of stem X in the ground to obtain its new plants? Explain your answer.

(e) What is the name of this method of reproduction of plants?

(f) What is the advantage of growing new plants from the underground stems like X ?

Answer

(a) Stem tubers (X)

(b) Potato tuber

(c) Eyes or Buds

(d) No, it is not necessary, even cut pieces of stem tuber (X) can be planted in the soil to produce new plants provided each cut piece has an eye or bud on it

(e) Vegetative propagation by tubers

(f) The method of vegetative propagation is much faster than the production of new plants from their seeds.

89. Question

A filamentous alga X is found in ponds, lakes and slow-moving streams. The filament of this alga simply breaks into two (or more) pieces on maturing and each piece then grows. to become a complete new alga.

(a) Name an alga which X is likely to be.

(b) What is the colour of X?

(c) What is the method of forming new algae by the breaking of parent alga known as ?

(d) An Amoeba also breaks up to form two. daughter Amoebae. What is the difference in the splitting Amoeba and splitting of this alga as a method of reproduction ?

(e) Name one marine animal which reproduces in the same way as alga X.

Answer

(a) Spirogyra (X)

(b) The colour of spirogyra (X) is green.

(c) Fragmentation is the method of forming new algae by the breaking of parent alga.

(d) Amoeba is a unicellular organism which reproduces by the asexual method called binary fission whereas alga is a multicellular organism which reproduces by the asexual method called fragmentation.

(e) Sea anemone

90. Question

When a broken piece of the stem of a plant X is planted in the soil, a new plant grows from it in a week' time. The leaves of plant X also have many small entities Y in their margins which can fall to the ground alone or alongwith leaves and grow into new plants.

(a) Name a plant which X could be.

(b) What are the entities Y present on the leaves of X known as?

(c) Name a plant other than X which can be reproduced from its leaves.

(d) Name a common plant grown in many homes which can be propagated from its broken stems like plant X.

(e) Name a kind of dormant organs present in dry stems of old grass plants lying in the fields which activated and produce green grass plants after the rains.

Answer

(a) The plant (X) could be bryophyllum.

(b) Buds (Y) are present on the leaves of bryophyllum (X).

(c) Begonia is also reproduced from its leaves.

(d) Money plant

(e) Buds are dormant organs which present in dry stem of old grass lying in the fields and activated and produce green grass plants after the rains.

Very Short Answer Type Questions-Pg-168

1. Question

Where are a plant's sex organs located?

Answer

The plant’s sex organs are located in flowers.

2. Question

What is the function of a flower ?

Answer

The main function of flower is reproduction. The reproductive parts of a flower produce male and female gametes that take part in reproduction.

3. Question

What are the reproductive organs in a flower ?

Answer

The reproductive organs in a flower are stamen and carpel.

4. Question

What is the name of :

(a) male part of a flower?

(b) female part of a flower ?

Answer

(a) Stamen is a male part of a flower.

(b) Carpel is a female part of a flower.

5. Question

What is the name of female organ of a flower (other than carpel)?

Answer

The female organ of a flower is called the carpel or pistil.

6. Question

What is the other name of sex cells?

Answer

Sex cells are also known as gametes.

7. Question

What is the name of sex cells (other than gametes)?

Answer

The sex cells are also known as germ cells.

8. Question

Name the male and female gametes in animals.

Answer

In animal, the male gamete is sperm and female gamete is ovum (egg).

9. Question

Where is the male gamete formed :

(i) in humans ?

(ii) in flowering plants ?

Answer

(i) In humans, the male gamete is formed in testes.

Tagging ||| Biology||How Do Organisms Reproduce||Male and Female Reproductive System

(ii) In flowering plants, the male gamete is formed in anther.

10. Question

Where is the female gamete formed :

(i) in humans ?

(ii) in flowering plants ?

Answer

In humans, the female gamete is formed in ovary.

Tagging ||| Biology||How Do Organisms Reproduce||Male and Female Reproductive System

(ii) In flowering plants, the female gamete is formed in ovary.

11. Question

Name two animals which undergo external fertilisation and two animals which undergo internal fertilisation?

Answer

External fertilization: Frog and fish

Internal fertilization: Human and cow

12. Question

Define sexual reproduction.

Answer

Sexual reproduction is a form of reproduction in which fusion of two special reproductive cells called 'sex cells' takes place.

13. Question

Do all organisms give birth to individuals like humans?

Answer

No. All organisms do not give birth to individuals like humans.

14. Question

Write the full forms of the following as they occur in biology:

(i) STD (ii) AIDS (iii) HIV

Answer

(i) STD - Sexually Transmitted Diseases.

(ii) AIDS - Acquired Immune Deficiency Syndrome.

(iii) HIV - Human Immunodeficiency virus.

15. Question

What is the causative organism for the following diseases ?

(i) Gonorrhoea

(ii) Syphilis

(iii) AIDS

Answer

(i) Gonorrhoea---- Bacteria

(ii) Syphilis----- Bacteria

(iii) AIDS---- Virus

16. Question

What are the organs in humans which produce the gametes ?

Answer

In humans, the reproductive organs are testes (in male) and ovaries (in female).

17 A. Question

What are the male sex cells in humans called?

Answer

The male sex cells in humans are called sperms.

17 B. Question

Name the organ which produces male sex cells.

Answer

Testes produce male sex cells (sperms).

18 A. Question

What are the female sex cells in humans called?

Answer

The female sex cells in humans are called eggs.

18 B. Question

Name the organ which produces female sex cells.

Answer

Ovary produces female sex cells called eggs.

19. Question

Which part of the human body :

(a) produces sperms ?

(b) produces ova ?

(c) passes sperms from a map to a woman?

Answer

(a) In human body, testes produce sperms.

(b) In human body, ovaries produce eggs.

(c) Penis is a part of male reproductive system which transfer sperms into a woman.

20 A. Question

What do the testes in a man produce ?

Answer

Testes in a man produce male gametes called sperms.

20 B. Question

What do the ovaries in a woman produce ?

Answer

Ovaries in a woman produce female gametes called eggs.

21 A. Question

Where in the human body does an ovum get fertilised?

Answer

In the human body, fertilization takes place in the fallopian tube (oviduct).

21 B. Question

Where does a fertilised ovum develop into a baby in the human body?

Answer

In the human body, the development of a fertilized ovum into a baby occurs in the uterus.

22. Question

Name the liquid that contains sperms.

Answer

The liquid containing sperm is known as semen.

23. Question

What is the name of the process in which thickened uterus lining along with blood vessels is removed from the body of a human female through vaginal bleeding?

Answer

Menstruation is a process in which blood and mucous flows out every month through the vagina.

24 A. Question

For how much time does menstruation last in human females (or women)?

Answer

Menstruation usually lasts for 3 to 5 days in human females.

24 B. Question

What is the frequency of menstrual cycle in human females (or women)?

Answer

The frequency of menstrual cycle in human females is once in a month if egg is not fertilised.

25. Question

Fill in the following blanks with suitable words :

(a) Pollen grains contain ..... gametes of a plant.

(b) Ovules contain ..... gametes of a plant.

(c) The ovary of a flower becomes ..... after fertilisation.

(d) The ovule becomes a ..... after fertilisation.

(e) Flowering plants reproduce by.....method of reproduction.

(f) The female organ of reproduction in the flower is the .....

(g) The male organ of reproduction in the flower is the ..... .

(h) The name of the structure in the flower in which the male gamete is formed is .....

(i) The ..... at the base of the carpel contains egg cells.

(j) The term used to refer to the transfer of pollen from the stamen of one flower to the carpel of another flower of the same species is .....

(k) The cells involved in sexual reproduction are called .....

(l) Fusion of gametes gives rise to a single cell called .....

(m) The process of fusion of gametes is called .....

(n) A multicellular animal starts its life from a ..... through sexual reproduction.

(o) The union of a sperm nucleus with an egg nucleus is known as ..... and results in a .....egg.

(p) The menstrual cycle is controlled by.....

Answer

(a) male (b) female (c) fruit (d) seed (e) sexual (f) carpel (g) stamen (h) anther (i) ovary (j) cross-pollination (k) gametes (l) zygote (m) fertilisation (n) single cell (zygote) (o) fertilisation ; fertilised (p) hormones

Short Answer Type Questions-Pg-169

26 A. Question

What are gametes?

Answer

Gametes are reproductive cells which take part in reproduction.

26 B. Question

In which sort of reproduction are gametes involved ?

Answer

Gametes are involved in sexual reproduction.

26 C. Question

What is formed when two gametes fuse?

Answer

Zygote is formed by the fusion of two gametes.

26 D. Question

What is this act of fusion called ?

Answer

Fusion of male and female gametes is called fertilisation.

27 A. Question

Write the names of (a) male sex hormone, and (b) female sex hormones.

Answer

Testosterone is a male sex hormone.

27 B. Question

What name is given to the fusion of sperm and ovum?

Answer

Oestrogen and Progesterone are female sex hormones.

27 C. Question

Name the tissue through which the foetus gets all the requirements from the mother's body.

Answer

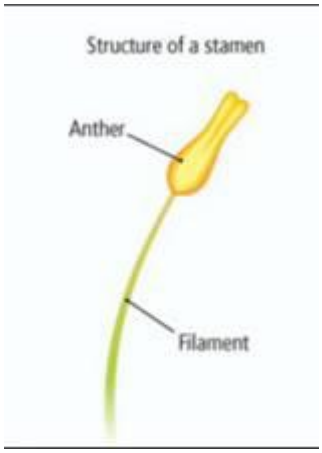
The fusion of sperm and ovum is known as fertilisation.

Placenta is a special tissue between developing foetus and uterine wall through which the foetus gets all the requirements from the mother's body.

28 A. Question

Draw a neat sketch of the stamen of a flower. Mark in it filament and anther.

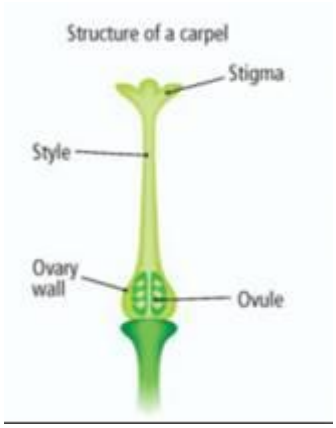
Answer



28 B. Question

Draw a neat sketch of the carpel of a flower. Mark in it stigma, style and ovary.

Answer



28 C. Question

What is made in (i) anther, and (ii) ovary, of a flower?

Answer

(i) Male gametes inside the anther and (ii) female gametes inside the ovary.

29 A. Question

Explain the terms 'self pollination' and 'cross-pollination' ?

Answer

Self-pollination: when pollen grains of a flower are transferred to the stigma of the same flower (or another flower on the same plant) is known as self-pollination.

Cross-pollination: When pollen grains of one flower are transferred to the stigma of another plant is known as cross-pollination.

29 B. Question

How do the insects help in cross-pollination?

Answer

Insects moves from flower to flower to suck nectar. When an insect sits on the flower of a plant, pollen grains from the anther of this flower get attached to its body. And When this insect sits on another flower of similar plant (or another plant), these pollen grains are transferred to the stigma of the other flower. Thus, insects help in cross-pollination.

29 C. Question

How is the process of pollination different from fertilization?

Answer

Pollination is the process of transfer of pollen grains from anther to the stigma. It occurs with the help of certain pollinator such as wind, water, insects, etc. Fertilisation, in other hand, is the fusion of male and female gametes. It occurs inside the ovule and leads to the formation of zygote.

30 A. Question

Explain the term 'fertilisation'.

Answer

The fusion of male and female gametes to form zygote is known as fertilisation.

30 B. Question

Give some examples of different modes of fertilisation in nature ?

Answer

The modes of fertilisation in nature are internal fertilisation and external fertilisation.

30 C. Question

What type of fertilisation takes place in (i) fish, and (ii) bird?

Answer

(i) External fertilisation takes place in fish.

(ii) Internal fertilisation takes place in birds.

31 A. Question

What are the male and female gonads in human beings? Mention their functions.

Answer

Testes are male gonads in human beings.

Functions of testes: (i) To produce sex cells called sperms.

(ii) To produce sex hormone called testosterone.

Ovaries are female gonads in human beings.

Functions of Ovaries - (i) To produce sex cells called ova or egg.

(ii) To produce female sex hormones called oestrogen and progesterone.

31 B. Question

State the advantages of sexual reproduction over asexual reproduction.

Answer

Advantages of sexual reproduction:

(i) In sexual reproduction, offspring has lot of variation because DNA of both individuals (male and female) get combine whereas in asexual reproduction, DNA of one individual is copied so, offspring has small variations.

(ii) In sexual reproduction, produced offspring has characteristics of both the parents.

(iii) Due to lot of variations, sexual reproduction allows species to change to more advanced forms from one generation to the next and speed up evolution whereas asexual reproduction does not allow a species to change much from one generation to the next and hence, evolution becomes very slow

32. Question

Describe the various steps involved in the sexual reproduction in animals. Draw labelled diagrams to show the fertilisation of an ovum (or egg) by a sperm to form a zygote.

Answer

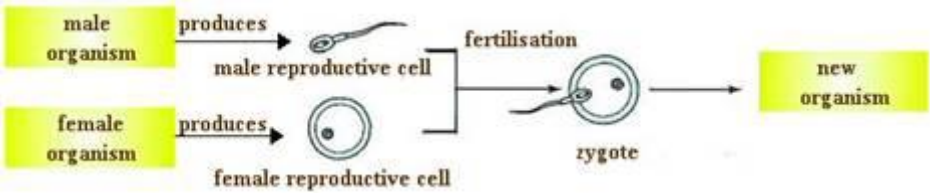
Following steps are involved in the process of sexual reproduction in animal:

(i) In animal, male parent produce male gametes called sperms. Millions of sperms are produced by testes (male gonad). The sperm is very small in size and has a head, a middle piece and a tail.

(ii) The female parent produces female gamete called ova (eggs) which is much bigger cell than the sperm, having a lot of cytoplasm. Like a sperm, an egg is also a single cell.

(iii) The next step is fertilisation. In this step, sperm enters the ovum and fuses with it to form a new cell called zygote. The zygote is the beginning of a new individual.

(iv) In this step, zygote begins to develop into an embryo. The zygote divides repeatedly to form a large number of cells and ultimately the zygote grows and develops to form a baby.



33. Question

Why does menstruation occur? Describe the menstrual cycle in human females (or women).

Answer

In female, ovary produces one egg every month. The uterus also prepares itself to receive a fertilised egg. So, the wall of uterus becomes thick and soft containing lots of blood capillaries. If egg gets fertilised with sperm, then fertilised egg gets attached with uterus wall and gets nourishment from it. In case, egg is not fertilised, then the inner lining of uterus breaks down and comes out in the form of blood and mucus through the vagina. This cycle occurs every month and is called menstruation.

Menstrual Cycle:

(i) Menstrual cycle begins when a girl reaches the age of puberty. At this age, ovaries release sex hormones in the blood which cause maturation of ova in ovaries.

(ii) One mature egg is released from the ovary into fallopian tube. This is termed as ovulation.

(iii) Before ovulation, uterus prepares itself to receive the fertilised egg. The inner linning of the uterus becomes thick and soft with lots of blood capillaries in it.

(iv) If the ovum does not get fertilised, then the inner lining of uterus is not required and hence it breaks down and comes out through the vagina in the form of blooding called menstruation.

(v) Menstruation usually lasts for 3 to 5 days.

(vi) After menstruation is over, the inner lining of the uterus starts building up again so that it becomes ready to receive the next ovum in case it gets fertilised.

(vii) If the ovum does not get fertilised even now, then the menstruation takes place again and this cycle goes on repeating.

34 A. Question

Write the various steps involved in the sexual reproduction in plants.

Answer

Following steps are involved in the process of sexual reproduction in plant:

(i) The male reproductive part of a flower is called stamen which consists a filament and an anther. Anther contains pollen grains.

(ii) The female reproductive part of a flower called carpel makes the female gametes. These gametes are present in the ovules and are called ova or egg.

(iii) The male gamete in the pollen grain fuses with the female gamete in the ovule to form a zygote (fertilised egg cell). This process of fusion is known as fertilisation.

(iv) The zygote grows within ovule and becomes seed.

(v) The seed produces new plant on germination.

34 B. Question

Name two plants which reproduce by sexual reproduction method and two plants which reproduce by asexual reproduction methods.

Answer

Sexual reproduction: Sunflower plant and wheat plant

Asexual reproduction: Ferns and mosses.

35 A. Question

What type of plants reproduce by sexual reproduction method?

Answer

Flowering plants reproduce by sexual reproduction.

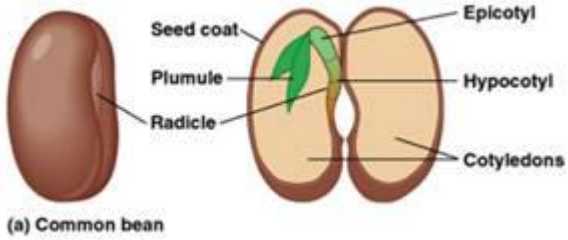
35 B. Question

What is a seed? What are the parts of a seed? Explain with the help of a labelled diagram.

Answer

Seed is reproductive unit of a plant which is capable to grow another such plant.

A seed is the reproductive unit of a plant (which can be used to grow a new plant). The parts of a seed are plumule, radical and cotyledon.



36 A. Question

What is puberty ? Who attains puberty at an earlier age in human beings : male or female (boy or girl) ?

Answer

(a) The age at which boy and girl become sexually mature and able to reproduce is called puberty. Females attain puberty at an age of 10-12 years.

(b) Functions of testes: (i) To produce sex cells called sperms.

(ii) To produce sex hormone called testosterone.

36 B. Question

Mention two functions each of (i) human testes, and (ii) human ovaries.

Answer

Functions of Ovaries-(i) To produce sex cells called ova or egg.

(ii) To produce female sex hormones called oestrogen and progesterone.

37 A. Question

What is gestation period ? How much is the gestation period in humans?

Answer

Gestation is the time period from the fertilisation up to the birth of a baby. The average gestation period in humans is about 9 months (about 38 weeks).

37 B. Question

Name one method of contraception which also protects against sexually transmitted diseases.

Answer

Sexually transmitted diseases are prevented to some extent by using condoms.

37 C. Question

Name one sexually transmitted disease for which no definite cure has been found so far. What is the causative organism of this disease ?

Answer

AIDS is a sexually transmitted disease for which no definite cure has been found so far. HIV is the causative organism for AIDS.

38. Question

What are the three types of methods used for birth control (or regulating child birth)? Give one example of each type.

Answer

There are three methods used for birth control:

(a) Barrier method – Diaphragm (or Cap).

(b) Chemical method - Oral pills.

(c) Surgical method - Tubectomy.

39 A. Question

What is the name of surgical method of birth control in human males in which the sperm ducts are cut and ligated (tied) at both ends?

Answer

Vasectomy is the surgical method of birth control in human males in which the sperm ducts are cut and ligated (tied) at both ends.

39 B. Question

What is the name of surgical method of birth control in human females in which the oviducts are cut and ligated (tied) at both ends?

Answer

Tubectomy is the surgical method of birth control in human females in which the oviducts are cut and ligated (tied) at both ends.

39 C. Question

Name the contraceptive device used by the human males which acts as a sheath over the male organ and traps the sperms in it.

Answer

Condom is a contraceptive device used by the males which acts as a sheath over the male organ and traps the sperms in it.

39 D. Question

Name the contraceptive device used by human females which is put over the cervix.

Answer

Diaphragm (or Cap) is a contraceptive device used by human females which is put over the cervix.

40 A. Question

Describe the surgical methods of birth control (i) for men, and (ii) for women.

Answer

(i) Vasectomy: In male, a small portion of the Vas deferens is removed and both the cut ends are ligated properly. This prevents the sperms from coming out.

(ii) Tubectomy- In female, a small portion of the fallopian tube is removed and the cut ends are ligated. This prevents the entry of ovum into the oviducts.

40 B. Question

Name two devices used in the barrier method of birth control.

Answer

The barrier methods of birth control are: Condom and Diaphragm

41 A. Question

What is meant by contraception ? What are the different methods of contraception ?

Answer

Contraception is the prevention of pregnancy by interfering with the normal process of ovulation, fertilisation and implantation.

There are 3 methods of contraception: (i) Barrier method (ii) Chemical method (iii) Surgical method.

41 B. Question

What is done in the contraception method known as (i) vasectomy, and (ii) tubectomy?

Answer

Contraception is the prevention of pregnancy by interfering with the normal process of ovulation, fertilisation and implantation.

There are 3 methods of contraception: (i) Barrier method (ii) Chemical method (iii) Surgical method.

41 C. Question

If a woman is using- copper-T for contraception, will it protect her from sexually transmitted diseases ?

Answer

No, using a copper-T will not provide a protection from STD as does not prevent entry of sperm.

42 A. Question

What are sexually transmitted diseases? Give two examples of sexually transmitted diseases.

Answer

The diseases which are transmitted from infected person to another person by sexual contact are called Sexually Transmitted Diseases.

Examples: AIDS, Syphilis.

42 B. Question

Which method of contraception prevents fertilised egg from being implanted in the uterus?

Answer

IUCD (Copper - T) prevents the implantation of the embryo in the uterus.

43 A. Question

What substances are contained (i) in oral pills, and (ii) in vaginal pills, used as contraceptives? How do they work?

Answer

(i) The oral pills contain hormones which stop the ovaries from releasing ovum into the oviduct.

(ii) The vaginal pills contain the chemicals called spermicides which kill the sperm.

43 B. Question

How does copper-T prevent pregnancy?

Answer

Copper-T is effective contraceptive device which is placed inside the uterus to prevent pregnancy.

43 C. Question

Name the disease caused by HIV.

Answer

HIV is the virus that causes AIDS.

44 A. Question

What is the name of surgical method of birth control (or preventing pregnancy) which is carried out (i) in men, and (ii) in women ?

Answer

(i) Vasectomy in men and (ii) Tubectomy in women.

44 B. Question

Name the part of a seed which (i) contains stored food (ii) grows into root, and (iii) grows into shoot.

Answer

(b)

(i) The part of a seed which contains stored food for baby plant is cotyledons.

(ii) The part of a seed which grows into root is radicle.

(iii) The part of a seed which grows into shoot is plumule.

45. Question

Explain how, off springs and parents of organisms reproducing sexually have the same number of chromosomes.

Answer

The gametes have half number of chromosomes as compared to that normal body cells. Reduction division (meiosis) takes place during gamete formation which halves the number of chromosomes in both male and female gametes. The original chromosome number (as in parent) is restored after fertilisation in sexual reproduction.

46. Question

In tobacco plant, the male gametes have 24 chromosomes.

(i) What is the number of chromosomes in the female gamete?

(ii) What is the number of chromosomes in the zygote?

Answer

(i) In tobacco plant, the female gamete have 24 chromosomes.

(ii) In tobacco plant, the zygote have 48 chromosomes.

47 A. Question

What would be the ratio of chromosome number between an egg and its zygote ?

Answer

he ratio of chromosome number between an egg and its zygote is 1:2.

47 B. Question

Distinguish between a gamete and a zygote.

Answer

Gamete	Zygote
It is sex cell or germ cell that takes part in fertilisation.	It is a product of fertilisation.
It is two types: Male gamete and female gamete	It is one type
It carries characteristics of only one parent.	It carries characteristics of both the parents.

48 A. Question

Fertilisation in humans can occur only once in a month. Why?

Answer

Fertilisation is the process of fusion of male and female gametes. This process occurs once in a month in humans because ovary releases egg (ovulation) once every month.

48 B. Question

What is the scientific name of (i) womb, and (ii) birth canal?

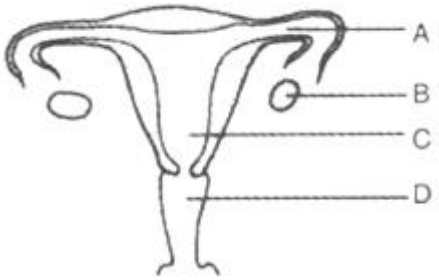
Answer

(i) The scientific name of womb is 'uterus'.

(ii) The scientific name of birth canal is 'vagina.

49. Question

The diagram shows female reproductive system. Name the parts labeled A to D.



(a) In which part do the sperms enter?

(b) Which part releases the egg?

(c) In which part does fertilisation take place ?

(d) In which part does the foetus develop?

Answer

A-Oviduct ; B-Ovary ; C – Uterus ; D – Vagina

(a) Part D (vagina)

(b) Part B (ovary)

(c) Part A (oviduct)

(d) Part C (uterus)

50. Question

Why is it an advantage for the testes to be situated in the scrotal sac outside the main body cavity ? Can you think of one disadvantage ?

Answer

The testes are located outside the abdominal cavity in the scrotum because the temperature of scrotum is less than the normal body temperature which is requires for sperm formation. Being outside the main body cavity, testes are more prone to injury.

51. Question

Which structures in human female are equivalent to the following structures in the male?

(a) testes

(b) vas deferens

(c) penis

In each case say in what respect the structures are equivalent ?

Answer

(a) In female, ovaries are equivalent to testes in male because both produce gametes.

(b) Fallopian tubes in females are equivalent to vas deferens in male because both transport gametes.

(c) Vagina in females is equivalent to penis in male because penis discharges sperms and vagina receives sperms.

52. Question

People who die from AIDS are not killed by the virus itself. Explain.

Answer

AIDS virus damages the immune system of the body rendering the body weak and prone to infections. Thus, virus does not kill the humans directly.

53 A. Question

What is the life support system of a fetus?

Answer

The fetus gets nutrition from the mother's blood through a special tissue called placenta. Thus, placenta act as a life support system of a fetus.

53 B. Question

How long does a human baby take to develop before birth?

Answer

Human baby takes about nine months to develop before birth.

53 C. Question

What is the name of the narrow opening between the uterus and the vagina.

Answer

Uterus opens into the vagina through a narrow opening called cervix.

Long Answer Type Questions-Pg-170

54 A. Question

What is meant by 'unisexual flowers' and 'bisexual flowers' ? Give two examples of each.

Answer

The flowers which have either stamens or carpels are called as unisexual flowers. E.g., Papaya, Watermelon.

The flowers which have both stamens and carpels are called as bisexual flowers. E.g., Hibiscus, Mustard plant.

54 B. Question

What is pollination? How does pollination occur?

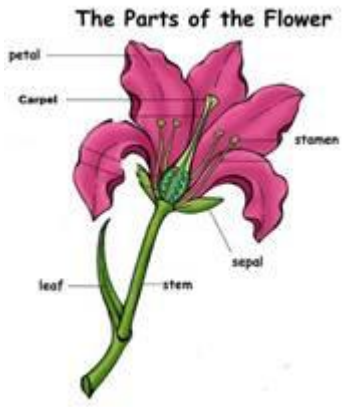
Answer

The transfer of pollen grains from the anther of a flower to the stigma of the same or another flower is known as pollination. It is done by insects, birds, wind and water.

55 A. Question

Draw a neat diagram of a flower showing its various parts. In this diagram mark stem, receptacle, sepals, petals, stamen and carpel.

Answer



55 B. Question

What name is given to (i) all the petals of a flower, and (ii) all the sepals of a flower ?

Answer

(i) All the petals of a flower collectively called the corolla.

(ii) All the sepals of a flower collectively called the calyx.

55 C. Question

What are (i) stamen, and (ii) carpel, in a flower?

Answer

(i) Stamen is the male reproductive part of the plant.

(ii) Carpel is the female reproductive part of the plant.

55 D. Question

What is the other name of carpel of a flower?

Answer

Carpel is also called pistil.

55 E. Question

What is the name of yellow powdery substance present in the anther of a flower ?

Answer

The yellow powdery substance present in the anther of a flower is pollen grain.

56 A. Question

What changes are seen in boys at the time of puberty?

Answer

Following changes are seen in boys at the time of puberty:

•Hair growth in armpits, genital area, chest and face.

•Formation of beards and moustaches.

•Development of deep hoarse voice.

•Development of reproductive organs.

56 B. Question

Name the organs which produce sperms in human males.

Answer

Testes produce sperms in human males.

56 C. Question

Draw a labelled diagram of the human male reproductive system. With the help of this diagram, describe the working of human male reproductive

system ?

Answer

The human male reproductive system consists of:

(i) Testes – These are main reproductive organs in male. They are located outside the abdominal cavity in scrotum. The testes produce male germ cells called sperms. It also produces male sex hormones called testosterone.

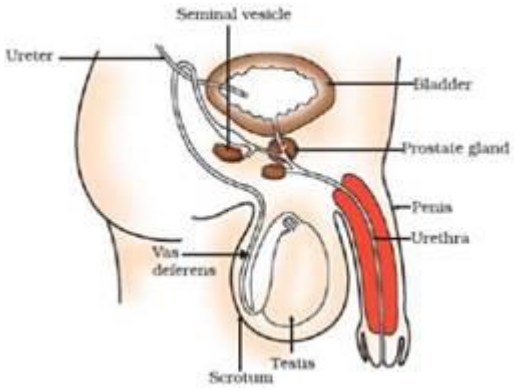
(ii) Scrotum – It is a muscular pouch which houses the testes. It is present outside the abdominal cavity and maintains a lower temperature than the normal body temperature.

(iii) Epididymis – It is a coiled tube which stores the sperms temporarily.

(iv) Vas Deferens - It is a long tube which carries the sperms from epididymis to another tube called urethra.

(v) Seminal vesicles and prostate gland – The secretion of seminal vesicles and prostate glands pass out along with sperms. These secretions provide a fluid medium for the movement of sperms.

(vi) Penis - It is an organ which passes the sperms from the man's body into the vagina in the women's body during mating.



56 D. Question

What is the role of seminal vesicles and prostrate gland in human male reproductive system?

Answer

The secretion of seminal vesicles and prostate glands provide a fluid medium for the movement of sperms.

57 A. Question

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

Answer

Following changes are seen in girls at the time of puberty:

•Hair growth in armpit and genital area.

•Beginning of menstrual cycle.

•Increase in breast size and darkening of skin of the nipples present at the tips of the breasts.

•Increase in size of uterus and ovary.

57 B. Question

Name the organs which produce ova (or egg cells) in human females.

Answer

Ovaries produce ova ova (or egg cells) in human females.

57 C. Question

Draw a labelled diagram of the human female reproductive system. With the help of this diagram, explain the working of human female reproductive system.

Answer

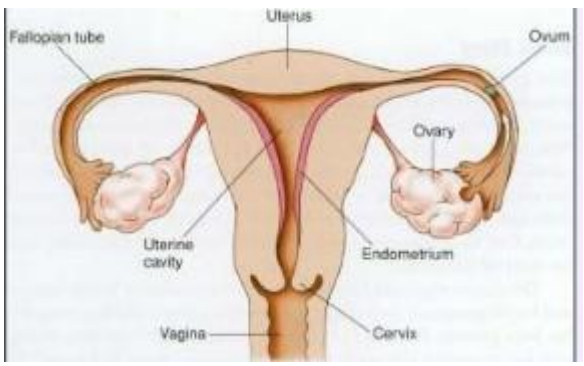
The human female reproductive system consists of:

(i) Ovaries - These are the primary reproductive organs in women. They are oval shaped and present inside the abdominal cavity of a woman. The ovaries produce ova or female gametes and sex hormones called Oestrogen and Progesterone.

(ii) Fallopian tubes (or Oviducts) - These are paired tubes which have funnel shaped openings that cover the ovaries. The ovum released by an ovary goes into the oviduct through its funnel shaped opening. The fertilisation of egg by a sperm takes place in it.

(iii) Uterus - It is an elastic bag- like structure in which the fertilised egg develops into a baby. The uterus opens into the vagina through the cervix.

(iv) Vagina - It is a tubular structure. It receives the sperms for the fertilisation. It is also called birth canal because it is the passage through which the baby is born.



57 D. Question

Describe the process of fertilisation in humans and development of embryo briefly.

Answer

The fusion of male gamete (sperm) with the female gamete (ova) is known as fertilisation. The process of fertilisation takes place in the fallopian tube. As sperm enter into the vagina through the process of copulation; it moves upwards and enter into the oviduct. In the oviduct, ovum fuse with the sperm to form zygote. The zygote (fertilised egg) get implanted in the inner lining of uterus and undergoes repeated division forming an embryo.

This embryo gets all the requirements from the mother's body through a special tissue called placenta.

58 A. Question

What is ovulation? How often does it happen in human females?

Answer

The process of release of ovum from the ovary is called ovulation. It occurs in the 14^{th} day of menstrual cycle.

58 B. Question

Where does fertilisation take place in human females ?

Answer

The fertilisation takes place in oviducts in females.

58 C. Question

Explain why, fertilisation is possible if mating takes place during the middle of menstrual cycle.

Answer

Fertilisation is possible if mating takes place during the middle of menstrual cycle because the process of ovulation usually takes place on the 14^{th} day of the beginning of menstrual cycle.

58 D. Question

What is meant by implantation ?

Answer

The embedding of foetus to the inner lining of uterus is celled implantation.

58 E. Question

What is placenta ? What is its function ?

Answer

Placenta is a special tissue between developing foetus and uterine wall through which the foetus gets all the requirements from the mother's body.

58 F. Question

What joins embryo to placenta in mother's body?

Answer

Umbilical cord joins embryo to placenta in mother’s body.

Multiple Choice Questions (MCQs)-Pg-171

59. Question

The anther contains :

A. sepals

B. ovules

C. carpel

D. pollen grains

Answer

The yellow powdery substance present in the anther of a flower is pollen grain.

60. Question

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

A. ovary

B. uterus

C. vas deferens

D. oviducts

Answer

The female reproductive system in human beings consists of a pair of ovaries, oviducts and the uterus. Vas deferens is the part of male reproductive system.

61. Question

One of the following is not a part of the human male reproductive system. This is :

A. testis

B. oviduct

C. seminal vesicle

D. prostate gland

Answer

Testis, seminal vesicle and prostate gland are part of male reproductive system in human. Oviduct is a part of female reproductive system.

62. Question

Which of the following is not a sexually transmitted disease ?

A. gonorrhoea

B. hepatitis

C. syphilis

D. AIDS

Answer

AIDS, Syphilis and gonorrhea are examples of sexually transmitted diseases. Hepatitis is not sexually transmitted disease.

63. Question

Which of the following method of contraception protects a person from acquiring a sexually transmitted disease?

A. oral pills

B. condom

C. copper-T

D. surgery

Answer

Sexually transmitted diseases are prevented to some extent by using condoms.

64. Question

In which one of the following birth control methods, a small portion of oviducts of a woman is removed by surgical operation and the cut ends are

ligated ?

A. copper-T

B. tubectomy

C. vasectomy

D. diaphragm

Answer

Tubectomy is the surgical method of birth control in human females in which the oviducts are cut and ligated (tied) at both ends.

65. Question

One of the following is a surgical method which prevents the sperms from reaching the ovum and pregnancy does not occur. This method is :

A. IUCD

B. vasectomy

C. condom

D. tubectomy

Answer

It is a surgical method to block the gamete transfer. It is done in males. In this method, a small portion of the Vas deferens is removed by surgical operation and both the cut ends are ligated properly. This prevents the sperms from coming out.

66. Question

Fertilisation results immediately in the formation of :

A. a zygote

B. an embryo

C. a placenta

D. a foetus

Answer

The fusion of male and female gametes is called fertilisation. Zygote is formed in the process of fertilisation.

67. Question

Which one of the following best describes the function of the umbilical cord? It :

A. feeds the embryo with digested substances.

B. conveys nutrients and wastes to and from the embryo respectively

C. removes waste matter from the embryo to the mother's blood.

D. supplies oxygenated blood from the mother to the embryo.

Answer

Umbilical cord joins embryo to placenta in mother’s body.

68. Question

The sexually transmitted disease which is caused by bacteria is :

A. malaria

D. diarrhoea

C. gonorrhoea

D. AIDS

Answer

Gonorrhoea is a sexually transmitted disease which is caused by bacteria.

69. Question

AIDS is a deadly disease which is caused by:

A. a protozoan

B. a fungus

C. a bacterium

D. a virus

Answer

AIDS is a sexually transmitted disease which is caused by a virus called HIV.

70. Question

The advantage that internal fertilisation has over external fertilisation is that in internal fertilisation:

A. new off-springs are exactly like the parent

B. production of large numbers of gametes is unnecessary

C. copulation and fusion of gametes is passive

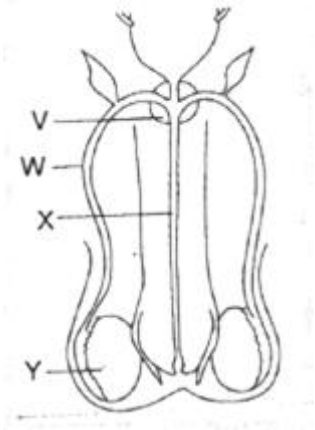
D. fewer individuals are produced

Answer

The advantage that internal fertilisation has over external fertilisation is that in internal fertilisation, fewer individual are produced.

71. Question

The figure given alongside shows the human male reproductive organs. Which structures make sperms and seminal fluid ?



A. V makes sperms and X makes seminal fluid

B. W makes sperms andY makes seminal fluid

C. X makes sperms and W makes seminal fluid y

D. Y makes sperms and V makes seminal fluid

Answer

Y represents teste which produces sperms and V represents seminal vesicle which secrete seminal fluid.

72. Question

In a flower, the parts that produce male and female gametes are respectively:

A. sepal and anther

B. filament and stigma

C. anther and ovary

D. stamen and style

Answer

In a flower, anther produces male gametes and ovary produces female gametes.

73. Question

Which of the following is the correct sequence of events of sexual reproduction in a flower ?

A. pollination, fertilisation, seed, embryo

B. seed, embryo, fertilisation, pollination

C. pollination, fertilisation, embryo, seed

D. embryo, seed; pollination, fertilisation

Answer

In flowering plants, the male and female gametes fuse and form zygote. This is called fertilisation. The zygote rapidly grows and develops into embryo and then seed.

74. Question

The characteristics transmitted from parents to offspring are present in:

A. cytoplasm

B. ribosome

C. golgi bodies

D. genes

Answer

The characteristics that are transmitted from parents to offspring are present in genes. Genes are present on chromosomes.

75. Question

Characters that are transmitted from parents to offspring during sexual reproduction show:

A. only similarities with parents

B. only variations with parents

C. both similarities and variations with parents

D. neither similarities nor variations with parents

Answer

Characters that are transmitted from parents to offspring during sexual reproduction show both similarities and variations with parents.

76. Question

The number of chromosomes in parents and off springs of a particular species remains constant due to :

A. doubling of chromosomes after zygote formation

B. halving of chromosomes during gamete formation

C. doubling of chromosomes after gamete formation

D. halving of chromosomes after gamete formation

Answer

The gametes have half number of chromosomes as compared to that normal body cells. Reduction division (meiosis) takes place during gamete formation which halves the number of chromosomes in both male and female gametes. The original chromosome number (as in parent) is restored after fertilisation in sexual reproduction.

77. Question

The length of pollen tube depends on the distance between :

A. pollen grain and upper surface of stigma

B. pollen grain on upper surface of stigma and ovule

C. pollen grain in anther and upper surface of stigma

D. upper surface of stigma and lower part of style

Answer

The length of pollen tube depends on the distance between pollen grain on upper surface of stigma and ovule.

78. Question

Which of the following statements are true for flowers ?

(i) flowers are always bisexual

(ii) they contain sexual reproductive organs

(iii) they are produced in all groups of plants

(iv) after fertilisation they give rise to fruits

A. (i) and (iv)

B. (ii) and (iil)

C. (i) and (iii)

D. (ii) and (iv)

Answer

Flowers are reproductive part of the plants because they contain sexual reproductive organs. These organs produce gametes which take part in the process of fertilisation and form zygote which give rise to fruits.

79. Question

The correct sequence of organs in the male reproductive system for the transport of sperms is:

A. testis vas deferens urethra

B. testis ureter urethra

C. testis urethra ureter

D. testis vas deferens ureter

Answer

Testes produces sperms or germ cells. The sperms transfer into epididymis from where vas deferens carries the sperms to another tube called urethra.

80. Question

In human males, the testes lie in the scrotam outside the body because it helps in the:

A. process of mating

B. formation of sperms

C. easy transfer of sperms

D. all the above

Answer

The testes are located outside the abdominal cavity in the scrotum because the temperature of scrotum is less than the normal body temperature which is requires for sperm formation.

81. Question

Which among the following are not the functions of testes at puberty?

(i) formation of germ cells

(ii) secretion of testosterone

(iii) development of placenta

(iv) secretion of estrogen

A. (i) and (ii)

B. (i) and (iii)

C. (ii) and (iv)

D. (iii) and (iv)

Answer

The function of testes at the stage of puberty are:

A. To produce germ cells (sperms)

B. To produce male sex hormone, testosterone.

82. Question

During adolescence, several changes occur in the human body. Mark one change from the following associate with sexual maturation in boys:

A. loss of milk teeth

B. increase in height

C. cracking of voice

D. weight gain

Answer

The human body undergoes several changes during adolescence. These changes mark the onset of puberty. The change which is associated with sexual maturation in boys is cracking of voice.

83. Question

In human females, an event that indicates the onset of reproductive phase is :

A. growth of body

B. change in hair pattern

C. change in voice

D. menstruation

Answer

In human females, menstruation indicates the onset of reproductive phase.

84. Question

The off springs formed as a result of sexual reproduction exhibit more variations because :

A. sexual reproduction is lengthy process

B. genetic material comes from two parents of different species

C. genetic material comes from two parents of same species .

D. genetic material comes from many parents

Answer

In sexual reproduction, offspring has lot of variation because DNA of both individuals (male and female) get combine. Due to lot of variations, sexual reproduction allows species to change to more advanced forms from one generation to the next and speed up evolution.

85. Question

One of the following occurs in the reproductive system of flowering plants as well as that of humans. This is :

A. vas deferens

B. anther

C. ovary

D. style

Answer

Ovary is the structure that occurs in the reproductive system of flowering plants as well as of humans. In both of them, it produces female gametes called egg.

86. Question

Which among the following statements are true for unisexual flowers?

(i) They possess both stamen and pistil

(ii) They possess either stamen or pistil

(iii) They exhibit cross pollination

(iv) Unisexual flowers possessing only stamens cannot produce fruits

A. (i) and (iv)

B. (ii), (iii) and (iv)

C. (ii) and (iii)

D. (i), (iii) and (iv)

Answer

Unisexual flowers have either stamen or pistil. They exhibit cross-pollination. Unisexual flowers which have only stamens cannot produce fruits.

87. Question

Which of the following statements are true for sexual reproduction in flowering plants?

(i) it requires two types of gametes

(il) fertilisation is a compulsory event

(iii) it always results in the formation of zygote

(iv) offsprings formed are clones

A. (i) and (iv)

B. (i), (ii) and (iv)

C. (i), (ii) and (iii)

D. (ii), (iii) and (iv)

Answer

During the sexual reproduction in flowering plants, male and female gametes fuse to form zygote. This process is known as fertilisation.

88. Question

One of the following process does not lead to the formation of clones. This is:

A. fission

B. fertilisation

C. fragmentation

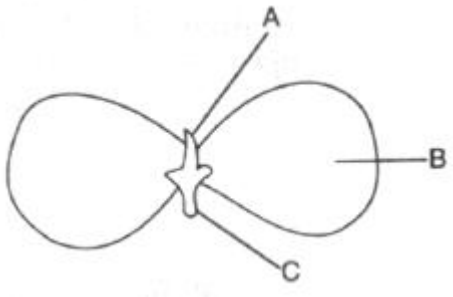
D. tissue culture

Answer

Fertilisation is the fusion of male and female gametes to form zygote. It does not lead to the formation of clones.

89. Question

In the figure given alongside, the parts marked A, B and C are sequentially:



A. cotyledon, plumule and radicle

B. plumule, radicle and cotyledon

C. plumule, cotyledon and radicle

D. radicle, cotyledon and plumula

Answer

In the given picture, A represents the plumula, B represents the cotyledon and C represents the radicle.

90. Question

The correct sequence of reproductive stages occurring in flowering plants is :

A. gametes, zygote, embryo, seed

B. zygote, gametes, embryo, seed

C. seed, embryo, zygote, gametes

D. gametes, embryo, zygote, seed

Answer

In flowering plants, the male and female gametes fuse to form zygote. The zygote rapidly grows and develops into embryo and then seed.

91. Question

The part of a seed which grows and develops into root on germination is:

A. cotyledon

B. plumule

C. follicle

D. radicle

Answer

The radicle is the part of a seed which grows and develops into root on germination.

92. Question

The male gametes in a flower and in a human are produced respectively in:

A. stigma and ovary

B. anther and style

C. ovary and testes

D. anther and testes

Answer

In a flower, male gametes are produced in anther whereas in a human, male gametes (sperms) are produced in testes.

93. Question

The ratio of number of chromosomes in a human zygote and a human sperm is:

A. 2 : 1

B. 3 : 1

C. 1 : 2

D. 1 : 3

Answer

The ratio of number of chromosomes in a human zygote and a human sperm is 2:1.

94. Question

The normal body cell of an organism contains 28 pairs of chromosomes. The number of chromosomes present in its germ cell will be :

A. 28

B. 14

C. 56

D. 42

Answer

The normal body cell of an organism contains 28 pairs of chromosomes. The number of chromosomes present in its germ cell will be 14.

Questions Based on High Order Thinking Skills (HOTS)-Pg-173

95. Question

The flask-shaped organ A at the centre of a flower is surrounded by a number of little stalks B having swollen tops which lie just inside the ring of petals.

(a) Name A. What are the various parts of A?

(b) Which part of A contains gametes?

(c) Name B. What is the swollen top of B known as ?

(d) What does the swollen top of B contain ?

(e) Out of A and B, which one is (i) male part, and (ii) female part of the flower?

Answer

(a) A is carpel (or pistil). The various parts of carpel (A) are stigma, style and ovary.

(b) Ovary contains gametes.

(c) B is stamen. The swollen top of stamen is known as anther.

(d) Anther contains pollen grains.

(e) (i) B is male part (ii) A is female part of the flower.

96. Question

When an insect sits on the flower of a plant then some particles A present in the top of little stalks in the flower attach to its body hair. When this insect now sits on the flower of another similar plant, then particles A attached to the hair of insect are put on the top of a flask-shaped organ at the centre of flower. The particle A grows a long tube B from the top of flask-shaped organ through which C moves down and reaches the bottom part of flask-shaped organ. Here C fuses with the nucleus of D contained in structure E. The fusion of C and D forms a new cell F which grows and develops into a seed of the plant.

(a) What are particles A ? What is the process of transferring A from one flower to another flower of similar plant by the insect known as ?

(b) What is the name of tube B?

(c) What is C which moves down through the tube B?

(d) Name D and E.

(e) What is F ?

Answer

(a) A is pollen grains. The process of the transferring pollen grains from one flower to another flower of similar plant by the insect is known as cross-pollination.

(b) Pollen tube

(c) male gamete (C) moves down through the pollen tube (B).

(d) D is female gamete (ovum or egg); E is ovule.

(e) F is fertilised egg (zygote).

97. Question

When a human female reaches a certain age then vaginal bleeding occurs for a few days after regular time intervals.

(a) What is this process known as (i) in scientific terms, and (ii) in everyday language?

(b) At what approximate age this process starts in human females? What is the human female said to have attained at this stage ?

(c) After how much time is this process repeated? For how many days this process usually lasts?

(d) What does the onset of this process in human females signify?

(e) At which particular event in the life of a human female this process stops temporarily but starts again?

(f) At which approximate age of human female this process stops permanently ?

Answer

(a) (i) Menstruation (ii) Periods

(b) Menstruation starts at the age of 12-14 years. The state at which human female attains this stage is called puberty.

(c) It is lasts usually for 3 to 5 days.

(d) Menstruation in human females signifies that the reproductive system of human female has started working.

(e) Menstruation stops temporarily at the beginning of pregnancy.

(f) Menstruation stops permanently at the age of 45-50.

98. Question

X and Y are two human beings. The organ A in the reproductive system of X releases a mature gamete B once a month which goes into a tube-like structure C through a funnel-like opening. The organ D in the reproductive

system of Y makes and releases gametes E which pass through a duct F and are introduced by an organ of Y, into the body of X. B and E fuse together in C to form a new cell G. The cell G divides repeatedly to form a ball of cells H which gets embedded in the lining of organ I of reproductive system of X where it grows and develops into a baby.

(a) Name (i) organ A, and (ii) gamete B.

(b) Write two names of tube-like structure C.

(c) Name (i) organ D, and (ii) gamete E.

(d) Write two names of duct F.

(e) Name (i) cell G (ii) ball of cells H, and (iii) organ I.

(f) Out of X and Y, which one is (i) male, and (ii) female ?

Answer

(a) (i) Organ A is Ovary, and (ii) Gamete B is ovum (or egg).

(b) Two names of C are: Fallopian tube or Oviduct

(c) (i) Organ D is Testis (ii) Gamete E is sperm

(d) Two names of duct F are : Vas deferens or sperm duct.

(e) (i) G is zygote (fertilised egg) (ii) H is embryo (iii) I is uterus.

(f) (i) Y is male (ii) X is female.

99. Question

When a fertilised egg E formed in the oviduct of a human female divides repeatedly to form an embryo, the embryo gets implanted in the thick and soft lining of the uterus. After this a disc-like special tissue T develops between the uterus wall and embryo through which all the requirements of the developing embryo (and foetus) are met from the mother's body. The embryo is connected to the tissue T through a string like structure S.

(a) What is the other name of fertilised egg cell E ?

(b) What is the name of tissue T ?

(c) Name the string-like structure S .

(d) Name two substances which pass from mother's blood to embryo through tissue T and, one type of substance which passes from embryo to mother's blood.

(e) What happens to S when the baby is born ? Why ?

Answer

(a) The other name of fertilised egg cell (E) is zygote.

(b) T is placenta.

(c) S is umbilical cord

(d) Nutrients and oxygen from mother's blood to embryo; and waste substances from embryo to mother's blood.

(e) When the baby is born, umbilical cord (S) is tied and then cut. It is done to separate the new born baby from the mother's body.

100. Question

When a female child is born, her ovaries already contain thousands of immature eggs (or ova) contained in immature structures A. On maturing, A bursts open and an egg shoots out of the ovary in a process called B. The process B starts in the females at puberty and occurs again and again after a time period x. Before every occurrence of process B, the inner lining of uterus becomes thick and soft with lots of blood vessels in it. When the egg cell gets fertilised by a sperm, then an event C occurs in the life of mature human female which lasts for time period y leading to the birth of baby. If, however, the egg cell released by the ova does not get a sperm to fuse with, then the thick and soft inner lining of uterus breaks down and comes out of the female's body in an event called D. The occurrence of event Dis controlled by chemical substances E

(a) What are A?

(b) What is process B?

(c) What is the time period x?

(d) Name the event C

(e) How much is the time period y?

(f) What is the name of process D?

(g) Name the chemical substances E

Answer

(a) A is follicles.

(b) The process (B) is called ovulation.

(c) X is 28 days.

(d) C is pregnancy.

(e) Y is 9 months.

(f) The process (D) is menstruation

(g) E is hormones which are chemical substances.

101. Question

In the surgical method of birth control available for males, the structures A in the reproductive system are cut and ligated (tied up) at both ends. This prevents the reproductive cells B from coming out from the organs C where they are made in the male body. Since B cannot come out from the male body, they cannot fuse with cell D in the body of a female and hence pregnancy is prevented.

(a) What are structures A ?

(b) What are cells B?

(c) Name the organs C.

(d) What is cell D ?

(e) What is the name of this surgical procedure for birth control available to males?

Answer

(a) Vas deferens (A)

(b) Sperms (B)

(c) Testes (C)

(d) Egg cell (or Ovum) (D)

(e) Vasectomy

102. Question

In the surgical method of birth control available for human females, the structures P in the reproductive system are cut and ligated (tied up) properly at both ends. This prevents the reproductive cell Q released by an organ R from entering the structures P so that Q is not available to fuse with another reproductive cell S coming from the male reproductive system. In this way, pregnancy is prevented.

(a) What are structures P?

(b) What is cell' Q?

(c) Name the organ R.

(d) What is the reproductive cells?

(e) What is the name of this surgical method of birth control available to females ?

Answer

(a) Fallopian tubes (Or oviduct) (P)

(b) Ovum (or egg cell) (Q)

(c) Ovary (R)

(d) Sperms

(e) Tubectomy

103. Question

The human males use a device X made of a very thin rubber sheet as a covering on the male organ to prevent pregnancy. This device traps the gametes Y in it. In order to prevent pregnancy, the human females use a device Z which is a circle of rubber with a metal spring around it. The device Z is put inside the vagina to cover the cervix. It stops Y from going into the uterus.

(a) What is device X ?

(b) What are Y?

(c) Name the device Z.

(d) What is the general name of these methods of birth control (or preventing pregnancy) ?

(e) The use of which contraceptive device, X or Z, can protect the persons from sexually transmitted diseases ?

Answer

(a) Condom (X)

(b) Sperms (Y)

(c) Diaphragm (Z)

(d) Barrier methods

(e) X

104. Question

A woman uses pills A as a method of birth control (or preventing pregnancy). The pills A stop the ovaries from releasing ovum into oviducts. Another woman uses pills B as a method of birth control. The pills B kill the sperms and prevent pregnancy.

(a) What do the pills A contain?

(b) What is the common name of pills A ?

(c) What do the pills B contain ?

(d) What is the common name of pills B ?

(e) What is the general name of these methods of birth control?

Answer

(a) Hormones (A)

(b) Oral pills (A)

(c) Spermicides

(d) Vaginal pills (B)

(e) Chemical methods

105. Question

A woman uses a device X made of a common metal for preventing pregnancy. This device works by preventing the implantation of fertilised egg cell (or embryo) in the female organ Y.

(a) What are the two names of device X?

(b) Name the organ Y.

(c) Can this method of contraception protect a woman from acquiring a STD?

Answer

(a) Copper-T and IUCD

(b) Uterus

(c) No

106. Question

A, B and C are three common STDs. A and C are caused by bacteria whereas B is caused by a virus D. The virus D reduces the immunity of the infected person to such a low level that the person can die of even very mild diseases.

(a) What could A and C be?

(b) What is B?

(c) Name the virus D ?

(d) How can A, B and C be caused ?

(e) Out of A, B and C, which one does not have a definite cure as yet ?

Answer

(a) Syphilis and Gonorrhoea

(b) AIDS

(c) HIV

(d) By sexual contact with an infected person

(e) B (AIDS)

107. Question

The germ cell A produced by a person X is round in shape and it fuses with another germ cell B having a long tail and produced by a person Y. The fusion of A and B produces a new cell C. The cell C divides repeatedly and grows inside the organ D of person X to form E in which the body features of the unborn baby are not much developed. E grows further 'to form Fin which the various body features of the unborn baby (like hands, legs, head, eyes, and ears, etc.) can be identified. F grows further and ultimately forms a baby. What are A, B, C, D, E and F ? Out of the two persons X and Y, which one is male and which one female?

Answer

A - ovum (or egg cell); B - sperm; C - zygote (fertilised egg); D - uterus; E - embryo; F - foetus; Y - male; X - female

108. Question

Explain why, a human zygote is more likely to grow into an adult than a frog zygote.

Answer

In humans, the development of zygote occurs inside the female body. So, it can grow safely into an adult. On the other hand, in frog, zygote grows outside the body in the water of pond or stream where it is very unsafe because it may be eaten up by other aquatic animals.

109. Question

In a bisexual flower, inspite of the young stamens being removed artificially, the flower produces fruit. Explain.

Answer

Bisexual flower consists both stamens (male reproductive part) and carpel (female reproductive part). If in a bisexual flower stamens are removed artificially and carpel remains intact in the flower then, cross-pollination may occur in this flower which may lead to the formation of fruit.

110. Question

In what ways is fertilisation in a plant :

(a) similar to fertilisation in a human?

(b) different from fertilisation in a human?

Answer

(a) Similarities: (i) In both plant and human, the fusion of gametes occurs in the female part.

(ii) The male gamete moves towards the female gamete.

(iii) Zygote is formed after the fertilisation which develops into an embryo.

Differences: (i) In plant, pollination bring male and female gametes together whereas in humans this is done by the process of copulation.

(ii) There is no equivalent in a plant to the oviducts in a human.

(iii) In a human, the male gametes(sperms) swim but in a plant self - fertilisation is possible.