4. Reproduction in Plants

Part-A

1. Question

The method of reproduction in unicellular organisms like amoeba and bacteria in which they split into two equal halves and produce new ones is called _____.

A. fragmentation

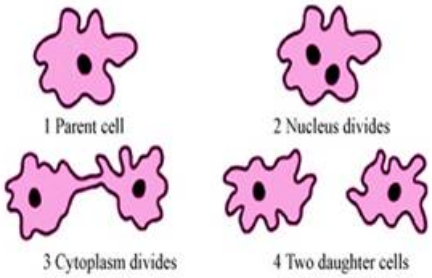
B. binary fission

C. budding

D. spore formation

Answer

Binary fission is the method of reproduction in unicellular organisms where their body splits into two equal halves and then they grow independently. This type of reproduction is common in bacteria and amoeba.



2. Question

In sexual reproduction of flowering plants, the first event involved in this is _____.

A. Fertilization

B. germination

C. Regeneration

D. pollination

Answer

Sexual reproduction is the process of reproduction in which two gametes (male and female) are involved which fuses to reproduce their offspring. In plants, fusion is possible only if gametes are brought together. So in order to bring gametes together pollination (transfer of gametes from one plant to another) takes place. Therefore pollination is the first step of sexual reproduction in plants.

3. Question

Which of the following statement is true?

A. Thin-walled non-mobile spores are called zoospores.

B. A motile asexual spore produced by some algae, bacteria and fungi are Akinetes.

C. Uninucleate, non-motile, asexual spores produced by fungus are called conidia.

D. Thick-walled vegetative cells produced by algae during adverse conditions are called aplanospores.

Answer

Zoospores are mobile spores, thick-walled vegetative cells in algae are Akinetes and aplanospores are thin-walled non-motile spores in algae.

4. Question

The fertilized ovary is a fruit. The fruit that develops from a single flower with multi carpellary, apocarpous superior ovary is _____.

A. Aggregate fruit

B. Composite fruit

C. Simple fruit

D. Multiple fruits

Answer

Aggregate fruits are the fruits which are developed from a single flower, multi carpellary (more than three carpels), apocarpous (distinct carpels) and a superior ovary. E.g. Polyalthia.

5. Question

If a water-soaked seed is pressed, a small drop of water comes out through the _____.

A. Stomata

B. lenticels

C. Micro Pyle

D. radicle

Answer

Micropyle is the small opening through which the pollen tube enters the embryo sac and transports the male gamete to the female gamete. After this the process of fertilization takes place.

6. Question

The mango fruit is called a stone fruit because it has _____.

A. skinny epicarp

B. stony mesocarp

C. fleshy endocarp

D. hard endocarp

Answer

Pericarp is made of 3 layers epicarp- the outer layer, mesocarp- the middle layer and endocarp- the inner most layer. In mango the inner most layer that is endocarp is hard like stone. So, due to hard endocarp mango is also known as stone fruit.

7. Question

Pick out the wrong statement.

A. In a dicot seed there is a short longitudinal whitish ridge called the raphae.

B. The minute opening in a dicot seed is known as micropyle.

C. The rudimentary stem portion is known as radicle.

D. The rudimentary root portion is called radicle.

Answer

The rudimentary root portion is known as radicle and rudimentary stem portion is known as plumule.

8. Question

Consider the following statements regarding the dispersal of fruits and seeds by wind and select the correct answer.

A. Fruits and seeds are dispersed with a sudden jerk by an explosive mechanism.

B. The fruits of tridax carry a persistent calyx modified into pappus.

C. The fruits of xanthium have sharp pointed stiff hooks.

D. The mesocarp of coconut is fibrous.

Answer

The mesocarp of coconut is fibrous. Dispersal of seeds and fruits involves different types of mechanisms. Dispersal of xanthium fruits are because of animals as their fruits have sharp pointed hooks, bracts etc.

9. Question

The product of triple fusion which acts as nutritive tissue for the development of an embryo is _____.

A. zygote

B. placenta

C. scutellum

D. endosperm

Answer

Function of endosperm is to provide nutrition.

10. Question

The disadvantage of self-pollination is _____.

A. There is no wastage of pollen grains.

B. The seeds are less in number.

C. Self-pollination is sure in bisexual flowers

D. Flowers need not depend on agents of pollination.

Answer

As the same flower is involved in self-pollination so number of seeds which could be transferred will be less.

11. Question

The flower is important to a plant because it helps in _____.

A. Attracting

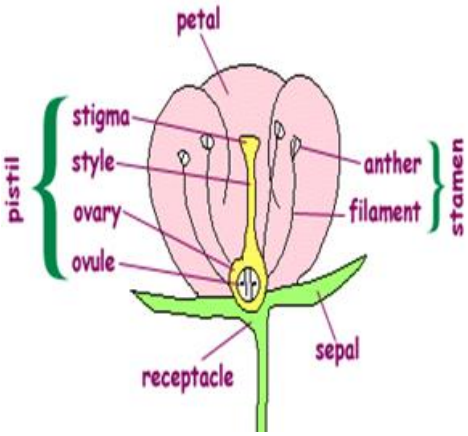
B. production of nectar

C. Pollination

D. sexual reproduction

Answer

In sexual reproduction two gametes are required which are male and female. So these gametes are present in stamen (which have male gametes) and pistil (which have female gametes) which are part of a flower only.



12. Question

The essential organs of the flower are _____ .

A. Calyx and Corolla

B. Androecium and Gynoecium

C. Calyx and Androecium

D. Corolla and Gynoecium

Answer

Androecium and gynoecium are the male and female reproductive part of the flower which are responsible for carrying the sexual reproduction in plants. Whereas calyx are the sepals which protect the flower in its early stages and corolla are the petals which are coloured part of plant which attracts the insects to carry out the process of pollination.

13. Question

Cross pollination is important for producing _____ .

A. new varieties of plants

B. plants with better growth

C. More viable seeds

D. all of the above

Answer

In cross-pollination transfer of pollen grains takes place from one flower to another which increases the chances of forming new varieties, plants with plant growth and more viable seeds.

14. Question

Anemophily occurs in _____ .

A. Vallisneria

B. Grass

C. Coconut

D. Datura

Answer

Anemophily is pollination due to the wind. In this case, flowers are small in size, and do not have a smell or are not attractive. Pollens are light and non-sticky. E.g. grass, maize etc.

15. Question

Which of the following structure/arrangement favours entamophily?

A. Pollen grains with wings and feathery stigma

B. Colourful petals and nectar secretion

C. A bunch of flowers with less pollen

D. Pollen grains with mucous covering.

Answer

Entamophily is pollination with the help of insects like butterfly, honey bees etc. So to attract these insects flower has to be attractive this could be possible only with colorful petals and nectar secretion.

16. Question

Post-fertilization, the ovule changes into a/an _____ .

A. seed

B. fruit

C. endosperm

D. pericarp

Answer

After fertilization ovule changes into seed, ovary into fruit, pericarp becomes the fruit wall and endosperm provides the nutrition.

17. Question

Which of the following is correctly matched?

A. False fruit – mango

B. Multiple fruits – apple

C. Aggregate fruit – polyalthia

D. Caryopsis – banana

Answer

Mango is stone fruit, apple is true fruit and cryopsis is single seed dried fruit like corn etc.

18. Question

Identify the mismatched pair.

A. Legume – Dry dehiscent fruit

B. Cypsela – Dry indehiscent fruit

C. Pome – Fleshy fruit

D. Regma – Resembles legume

Answer

Follicles resembles legume whereas regma develops from ovary.

Part-B

1. Question

Write any two differences between asexual and sexual modes of reproduction.

Answer

Asexual Reproduction	Sexual Reproduction
• Involves spore formation	• Involves male and female gametes
• Takes place in lower plants	• Takes place in higher plants
• E.g. algae, fungi	• E.g. china rose

2. Question

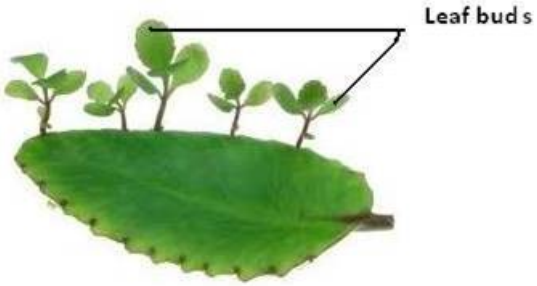
What is vegetative propagation? Mention the vegetative propagules in:

i) Bryophyllum ii) Sprirogyra

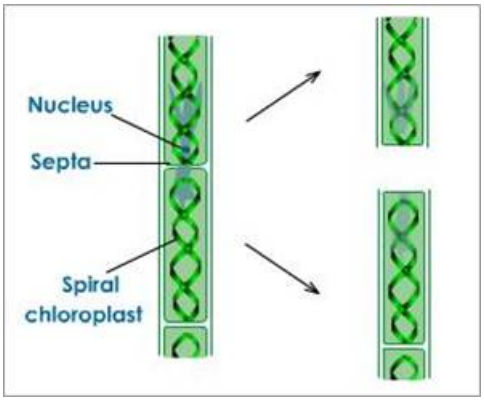
Answer

Vegetative propagation is the process of forming offspring from the pre-existing structures like roots, stems etc. It is generally of two types budding and fragmentation. Budding can be seen in Hydra and fragmentation can be seen in spirogyra.

(i) Bryophyllum: - Budding. In budding new offspring are produced through the buds which are repetitive cell division at one spot.



(ii) Spirogyra: - Fragmentation. In fragmentation, main plant body or parent body gets divided into small fragments which later develops into an individual plant.



3. Question

Arrange the following events of sexual reproduction in plants in the correct sequential Order:

seed formation, pollination, dispersal of seeds, fertilization.

Answer

Pollination → fertilization → seed formation → dispersal of seeds.

With the help of pollination, gametes are transferred and brought together which are later fertilized. After fertilization seed formation takes places which are later dispersed with the help of various mechanisms.

4. Question

Define pollination.

Answer

Pollination is the transfer of pollen or male gametes from the anther of one flower to the stigma of an other or same flower. It is the first step in the process of sexual reproduction. It is of two types:

(i) Self-pollination: - Also known as autogamy. In this, both male and female gametes are of the same flower. E.g. peas, sunflower etc.

(ii) Cross-pollination: - Also known as allogamy. In this pollens are transferred from anther of one flower to stigma of another flower with the help of wind, water or insects. E.g. Legumes, grass etc.

5. Question

Define fertilization.

Answer

After the process of pollination, a male gamete is transferred to the stigma of the flower. After the transfer, pollen tube is formed which carries the male gamete to the female gamete. Then male and female gametes get fused to form a fertilized egg known as a zygote. This process of fusion is known as fertilization.

6. Question

Name the agents of pollination in the following cases:

i) Bright coloured flowers with scent and nectar glands.

ii) No color / scent/ nectar but pollen grains are dry, light weight and powdery. Stigma is feathery.

Also mention the plants in cases (i) & (ii).

Answer

(i) Entamophily- Pollination with the help of insects like butterfly and honeybee. To attract these insects, flower has to be of bright color with scent and nectar glands. E.g. Rose etc.

(ii) Anemophily- Pollination with wind is known as anemophily. For the transfer of pollen with the wind, pollen has to be dry, light weight and powdery. And to catch these pollens stigma needs to be feathery. E.g. grass, maize etc.

7. Question

Name the events (i) & (ii) and mention the nature of the nuclear structures formed at the end in the following cases:

(i) male gamete (n) + egg (n) = Zygote (2n)

(ii) male gamete (n) + secondary nucleus (2n) = Endosperm nucleus (3n).

Answer

(i) Fusion of male gamete (n) and an egg (n) to form the zygote (2n) is known as fertilization. Nuclear is Haploid that is 2n.

(ii) Fusion of male gamete (n) with the secondary nucleus (2n) to form an endosperm nucleus (3n) is triple fusion. And the nature of nucleus formed in triploid that is 3n.

8. Question

Differentiate dehiscent fruits and indehiscent fruits with suitable examples.

Answer

Dehiscent fruits	Indehiscent fruits
• They split up to disperse the seeds.	• They do not split up and seeds are dispersed after decaying of the pericarp.
• E.g. peas, lady's finger etc.	• E.g. paddy, cashew nut etc.

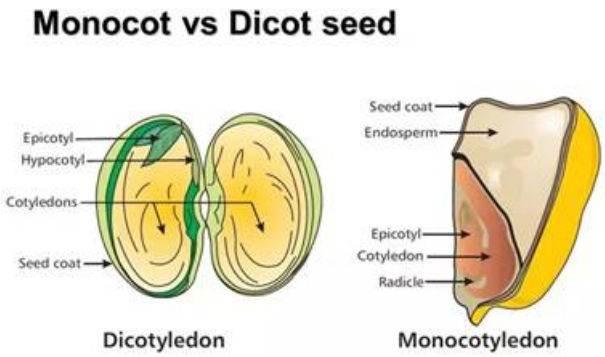
9. Question

What are monocotyledons and dicotyledons? Give examples.

Answer

Monocotyledons: - Seeds with single cotyledon are known as monocotyledon. E.g. maize, rice etc. Their leaf have parallel venation.

Dicotyledons: - Seeds with two cotyledons are known as dicotyledons or dicots. E.g. Bean etc. Their leaf generally have reticulate venation.



10. Question

Give suitable terms for the following methods of seed / fruit dispersal, with one example each: (i) by wind (ii) by water (iii) by animals.

Answer

Method of seed dispersal	Name	Example
• By wind	Anemochory - In this wind is responsible for seed dispersal. So, for this seeds need to be light.	Tridax
• By water	Hydrochory – Seed dispersal by water. Fruits which are dispersed by water tends to have a outer coat.	Lotus
• By animals	Zoochory – So for dispersal fruits have sharped hooks, spines etc. so that it can be carried off with animals easily.	Xanthium, Achyranthus

11. Question

Give any two examples for each of the following cases where dispersal of fruits and seeds take place: (i) by birds (through excreta) (ii) by human beings

Answer

(i) By birds: - Tomato and guava. These seeds are eaten with the edible portion and later excreted out. They have protective layer which protects the seeds from digestive juices.

(ii) By human beings: - Rubber and Eucalyptus.

12. Question

What is double fertilization?

Answer

There are two male gametes. One male gamete fuses with the egg to form a zygote. This fusion between male and female gametes is known as fertilization. And the second male gamete fuses with secondary nucleus to form the endosperm nucleus. This process of fusion of male gamete with egg and secondary nucleus is known as double fertilization.

1^{st} male gamete (n) + Egg(n) → Zygote (2n)

2^{nd} male gamete (n) + Secondary nucleus (2n) → Endosperm nucleus (3n)

13. Question

What is triple fusion?

Answer

Fusion of male gamete with the secondary nucleus to form endosperm nucleus is known triple fusion. This is known as triple fusion because in this two polar nuclei fuse with the male gamete hence the result (endosperm nucleus) which we get after fusion is triploid in nature.

2^{nd} male gamete (n) + Secondary nucleus (2n) → Endosperm nucleus (3n)

14. Question

a. Identify Fig. A and B.

b. Which part of A is modified into B.

A


B

Answer

Figure A is the gynoecium or the female reproductive part of flower. Stigma, style and ovary are the parts of gynoecium.

Figure B is the fruit.

Fruit is nothing but the modified ovary.

15. Question

The methods of reproduction and the organisms are given below. Match the type of reproduction with the suitable organism.

Fission	Spirogyra	Yeast
Budding	Protozoans	flatworm
Fragmentation	Bryophyllum	Bacteria

Answer

Fission	Protozoans	Bacteria
Budding	Bryophyllum	Yeast
Fragmentation	Spirogyra	flatworm

16. Question

i) Composite fruits are formed by all the flowers of _____,

ii) _____ fruit is developed from a single flower with a multicarpellary apocarpous superior ovary.

Answer

(i) whole inflorescence

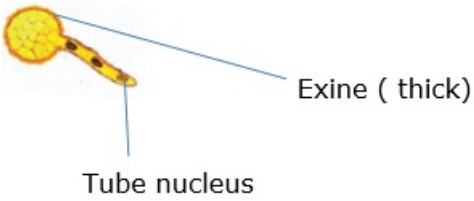
(ii) Aggregate fruits

17. Question

Draw the given diagram and label the following parts:

i) Exine (ii) Tube nucleus.

Answer



18. Question

Match the following with respect to dispersal of fruits/seeds:

a) Autochory	I) Lotus
b)Anemochory	II) Xanthium
c) Hydrochory	III) Tridax
d) Zoochory	IV) Balsam

Answer

a)Autochory (dispersal of seeds by bursting or by active mechanisms)	Balsam
b)Anemochory (dispersal by wind)	Tridax
c)Hydrochory (dispersal by water)	Lotus
d)Zoochory (dispersal by animals)	Xanthium

19. Question

Use words from the given list to complete the following paragraph. (The words may be used once / more than once / not at all).

(seed, fruit, pollination, dispersal, germination, fertilization, flower, reproduction)

Ramu went to the field along with his father. He sowed mustard seeds in the soil. After a few days, he observed the process of _____ _. The seeds grew into plants and produced _____. On maturity, these flowers produced pollen grains that were transferred to the stigma by _____ _. The male gametes fused with the female gametes during the process of _____ _.

Answer

Ramu went to the along with his father. He sowed mustard seeds in the soil. Aster a few days he observed the process of **germination.** The seeds grew into plants and produced a **flower**. On maturity, these flowers produced pollen grains that were transferred to the stigma by **pollination.** The male gametes fused with the female gametes during the process of **fertilization.**

20. Question

Coconut seeds are dispersed by Hydrochory (dispersal by water). Mention the part of the fruit whose modification help in this mechanism.

Answer

Fibrous mesocarp helps in hydrochory in coconut seeds because the fibrous layer is easily carried out by the water to other places.

Part-C

1. Question

i) Name the process by which a fruit is developed.

ii) Explain the development process in brief.

iii) Draw a neat, labelled diagram of that process.

Answer

(i) By the process of fertilization the fruit is developed. Fertilization is the process of fusion of male and female gametes to form the zygote.

(ii) Development process:-

1. Germination of pollen grains: - by the process of pollination pollen grain when lands on suitable stigma. Pollen has 2 cells. One is vegetative cell and other is a generative cell. Vegetative cell forms the pollen tube which carries the generative cell which later gets divided into 2 male gametes.

2. Fertilization: - through micropyle pollen tube enters the embryo-sac and releases the male gametes in it. Then fusion between male and female takes place which forms the zygote. This process of fusion is known as the fertilization.

3. Triple fusion: - Fusion of male gamete with the secondary nucleus to form endosperm nucleus is known triple fusion. This is known as triple fusion because in this two polar nuclei fuse with the male gamete hence the result (endosperm nucleus) which we get after fusion is triploid in nature.

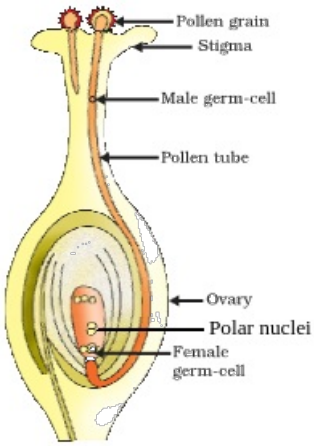
4. Double fertilization: - There are two male gametes. One male gamete fuses with the egg to form a zygote. This fusion between male and female gametes is known as fertilization. And the second male gamete fuses with secondary nucleus to form the endosperm nucleus. This process of fusion of male gamete with egg and secondary nucleus is known as double fertilization.

5. Post- fertilization changes: - (A) ovule → seeds

(B) Integuments → seed coats

(C) Ovary → Fruit.

(iii)



2. Question

Write the two events involved in the sexual reproduction of a flowering plant.

i) Discuss the first event and write the types.

ii) Mention the advantages and the disadvantages of that event.

Answer

Two events involved in the sexual reproduction of a flowering plant are **pollination** and **fertilization.**

Pollination is the process of transfer of pollen from the anther to the stigma of the flower. It is of two types – Self-pollination and cross-pollination.

Self-pollination: - In self-pollination, pollen from the anther of one pollination lands on the stigma of same flower. It is also known as autogamy. E.g. Wheat, barley etc.

Advantages: - 1. Pollination does not depend on other agents.

2. no pollen wastage.

Disadvantage: - 1. No new variety.

2. new plants are weak.

Cross- pollination: - In cross-pollination pollen from anther of one flower lands on the stigma of another flower by the means of water or animals or wind. It is also known as allogamy. E.g. grasses etc.

Advantages: 1. Seeds are viable.

2. New varieties are produced.

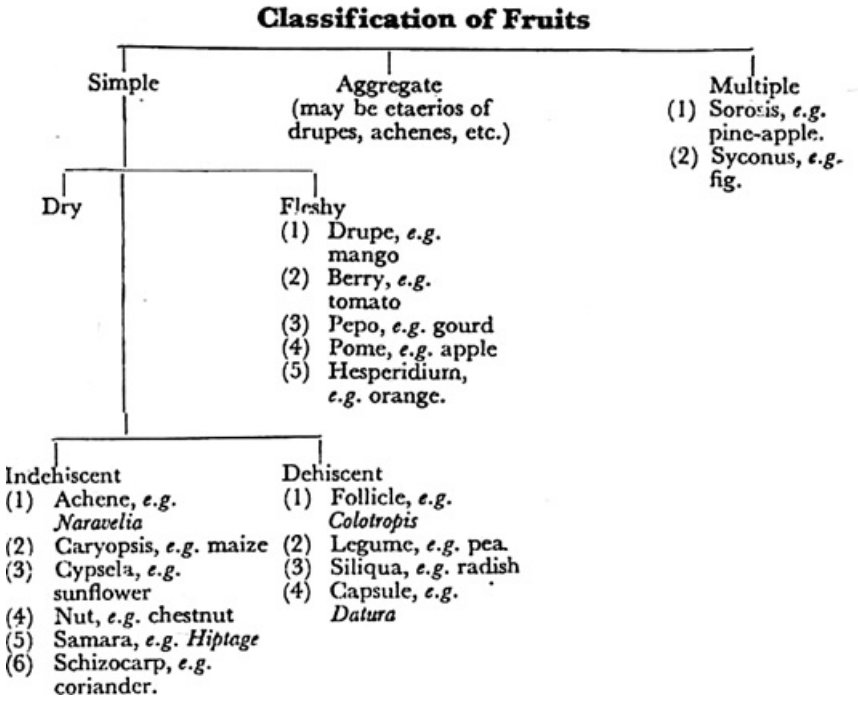
3. Question

i) Fruit is the product of fertilization. Is there any fruit which is formed without the act of fertilization?

ii) Represent the classification of fruits in a diagrammatic sketch.

Answer

- (i) Parthenocarpic fruits are the fruits which are produced without the process of fertilization. E.g. seedless grapes, guava etc.



4. Question

Compare aggregate fruits with multiple fruits and give suitable examples.

Answer

Aggregate Fruits	Multiple Fruits
• A single flower can produce many fruits	• Many flowers combine to give single fruit.
• Develops from- Multicarpellary apocarpous superior ovary.	• Develops from- the whole inflorescence.
• Free carpel becomes fruitlet.	• The fertilized flower becomes fleshy part of the fruit.
• E.g. Polyalthia	• E.g. Jackfruit

5. Question

Describe the structure of a dicot seed.

Answer

The structure is given below:

1. Dicot seed is bulky.

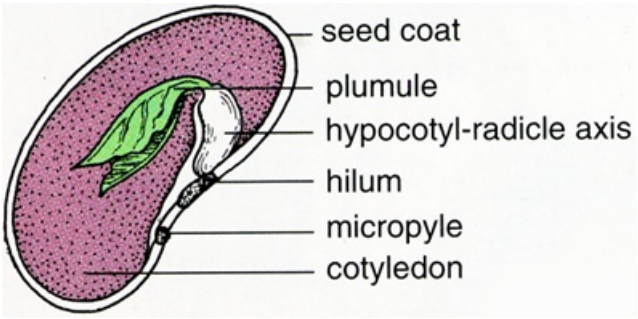
2. The short longitudinal structure is known as raphae.

3. Micropyle or the grem pore is present at the end of raphae.

4. Seed coat encloses the embryo.

5. Cotyledons are attached to the primary axis.

6. Primary axis has rudimentary root called radicle and rudimentary stem called plumule.



6. Question

Describe the structure of a monocot seed.

Answer

The diagram of monocot 1. Very thin seed coat.

2. Fruit wall thin and fused with the seed coat.

3. Fruit covered with chaff which is yellowish bracteoles.

4. The embryo has scutellum which is single cotyledon and a shoot axis.

5. The lower part has radicle and has coleorhiza.

6. The upper part has plumule and a sheath which covers it known as coleoptile.

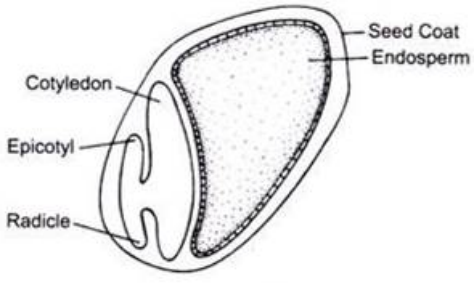


Fig. 4.16 (i) Monocot Seed Structure

7. Question

Observe the given diagram:

i) Draw the diagram and label the parts.

ii) What happens to the parts labelled ‘ E’ and ‘F’, after the process of fertilization?

Answer

- (i)

A. Petals

B. Stigma

C. Style

D. Stamen

E. Ovary

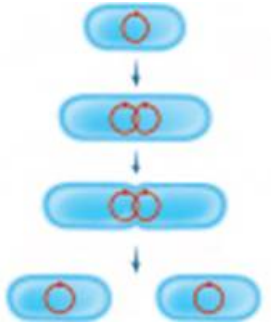
F. Ovules

G. Sepals

(ii) After fertilization Ovary changes into fruits and ovary into seeds.

8. Question

Look at the diagram given below:



Answer the following:

i) Name the method of reproduction depicted here.

ii) Name an organism in which you find this method of reproduction.

iii) Does this method of reproduction favour variation?

Answer

(i) Binary fission. In binary fission, parent divides into two parts which later develops into independent individuals.

(ii) Amoeba.

(iii) No, this method does not favour variation. Because in this type of reproduction, offspring have the similar characteristics of parents.

9. Question

Imagine you have a garden with the plants listed below. A swarm of bees visits your garden. Do you think the bees will visit all the flowers? Name the flowers which you think the bees will be attracted to. Give reasons to substantiate your answer.

(Jasmine, Nerium, Gulmohar, Rose, Lotus, Corn, Sugarcane, Bamboo, Chrysanthemum, Dahlia, Grass, Coconut, and Peas)

Answer

- The bee will visit- Jasmine, nerium, gulmohar, rose, lotus, chrysanthemum, dahlia, and peas because they have attractive petals, scented flowers and nector as attraction.

Due to presence of these characteristics entamophily that is pollination with the help of insects is possible.

10. Question

A farmer has two fields A and B. He cultivates peas (Pisumsativum) in both the fields.

Field A is covered with nets to keep out birds and insects. Field B is left uncovered.

i) Name the type of pollination that would occur in field ‘A’ and field ‘B’

ii) Which of these fields will give a higher yield?

iii) To raise the next crop, from which field should the seeds be chosen by the farmer.

Give reason to support your answer.

Answer

- (i) Pollination in field ‘A’ **Self-pollination.**

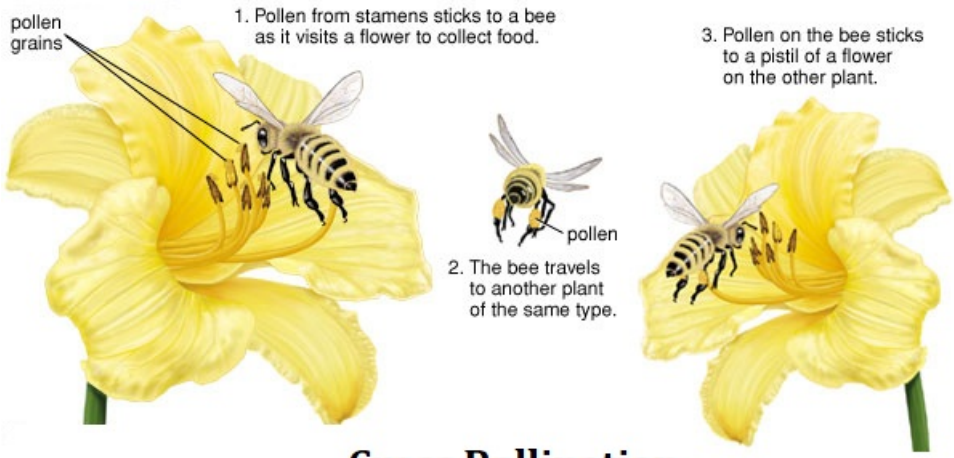
Pollination in field ‘B’ **Cross-pollination.**

(ii) Field B will have higher yield as it has cross-pollination. Peas generally have cross pollination for transfer of pollen.

(iii) Farmer should use seeds from field B because it may have some new varieties and also seeds will be more viable because of cross-pollination.

The diagram for cross pollination and self pollination is shown below:

Self Pollination



Cross Pollination

11. Question

Mango and Coconut are both drupes. The mesocarp of mango is edible, while it is not so in coconut. Based on this fact, answer the following:

i) Which part of the coconut is edible?

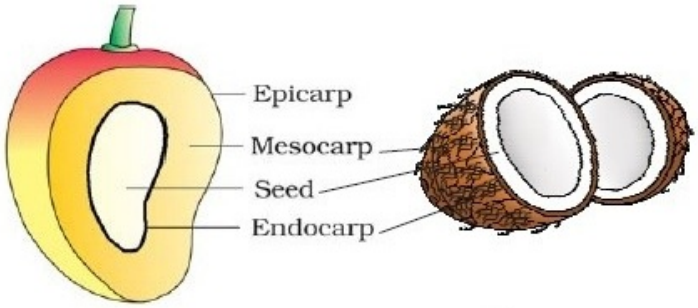
ii) Why does the coconut have a fibrous mesocarp?

iii) Can you mention any other use of the fibrous mesocarp?

Answer

-

The diagram is shown below:



Parts of a fruit : (a) Mango (b) Coconut

(i) Endospermic part which is white in color is edible.

(ii) Coconut has fibrous mesocarp for the fruit dispersal by the water.

(iii) It is protective and it can be used in making ropes.

12. Question

Group the following under the given heads: (a) fruit (b) seed (c) neither fruit nor seed.

tomato, cucumber, sprouted pulses, naked bean, grapes, celery, potato, sugarcane, apple, runner bean.

Fruit	Seed	Neither fruit nor seed
Tomato	Sprouted beans	Celery
Cucumber	Runner beans	Potato
Grapes	Naked beans	sugarcane
Apple		

Answer

13. Question

Ramu and Somu happened to observe Calotropis seeds floating in the air. They decided to follow a few of them until the seeds landed on the ground. They recorded their observations in a table as follows:

Distance travelled by seeds in meter	Time taken in minutes
25	6
50	15
37	10
87	17
17	2

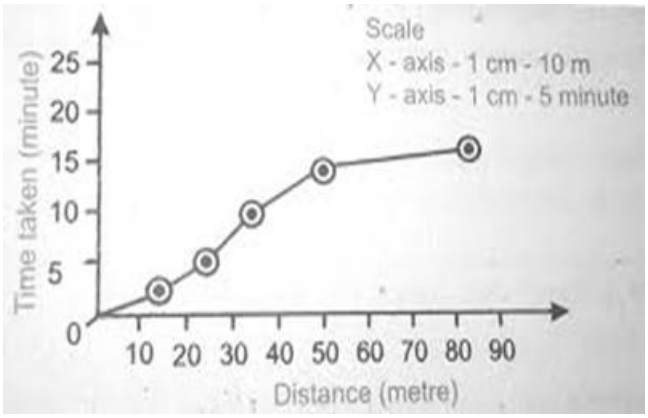
i) Draw a graph for the above data taking Distance on ‘X’ axis and Time on ‘Y’ axis.

ii) Is there any relationship between the distance travelled and the efficiency of dispersal?

iii) State the inference you draw from the graph.

Answer

- (i)



(ii) Yes, there is a relation between distance travelled and efficiency of dispersal. More the seed dispersal more is the efficiency.

(iii) It shows that seed dispersal and time took are directly proportional. If seeds are light weighed then it will cover more distance.

14. Question

Given below is a list of dry fruits. Assign the fruits to their relevant types.

(Cotton, Tridax, Paddy, Castor, Coriander, Beans, Peas, Calotropis, Mirabilis, Cashew, Acacia, Lady’s finger)

i) Achene ii) Caryopsis iii) Cypsela iv) Nut

v) Cremocarp vi) Lomentum vii) Regma

viii) Loculicidal capsule ix) Septicidal capsule x) Follicle xi) Legume

Answer

-

I. Achene – Mirabilis

II. Caryopsis - paddy

III. Cypsela - Tridax

IV. Nut - Cashew

V. Cremocarp - coriander

VI. Lomentum - Acacia

VII. Regma - castor

VIII. Loculicidal capsule - cotton

IX. Septicidal capsule – Lady’s finger

X. Follicle - calotropis

XI. Legume – Beans and peas

15. Question

Monish enters the kitchen and happens to see his mother getting the ingredients ready to prepare kadamba sambar. He sees the ingredients laid out in the kitchen. Help him sort out the ingredients into the fruit types you have studied.

(dhal, tamarind, brinjal, tomato, drumstick, coriander, mustard, lady’s finger, mango)

Answer

-

1) Dry indehiscent fruits are one of the types of dry fruits, those in which there isn’t a seedpod which open is known as indehiscent fruits.

2) Fleshy fruits are fruits that have fleshy parts as its main. They are simple, aggregate or multiple in which they come out from the ovary. Berries, Pine etc are the examples.

3) Schizocarpic Fruit is a subtype of indehiscent fruits consisting of two carpels which at maturity separate along the midline into two one-seeded halves, each of which is indehiscent. Eg. Mimosa, maple, coriander, hollyhock.

Ingredient	**Fruit**
Dhal	Dry Indehiscent fruit
Tamarind	Dry Indehiscent fruit
Brinjal and tomato	Simple fleshy fruit
Drumstick	Dry Dehiscent fruit
Coriander	Schizocarpic fruit
Mustard	Schizocarpic fruit
Lady’s finger	Dry Indehiscent fruit
Mango	Simple fleshy fruit

16. Question

Name the parts of a dicot seed based on the given clues:

i) Rudimentary root_____.

ii) Rudimentary shoot_____.

iii) Fleshy structure storing food for the embryo_____.

iv) The outer protective layer of a seed is _____.

v) The minute opening seen in the seed coat is _____.

Answer

-

i. Radicle

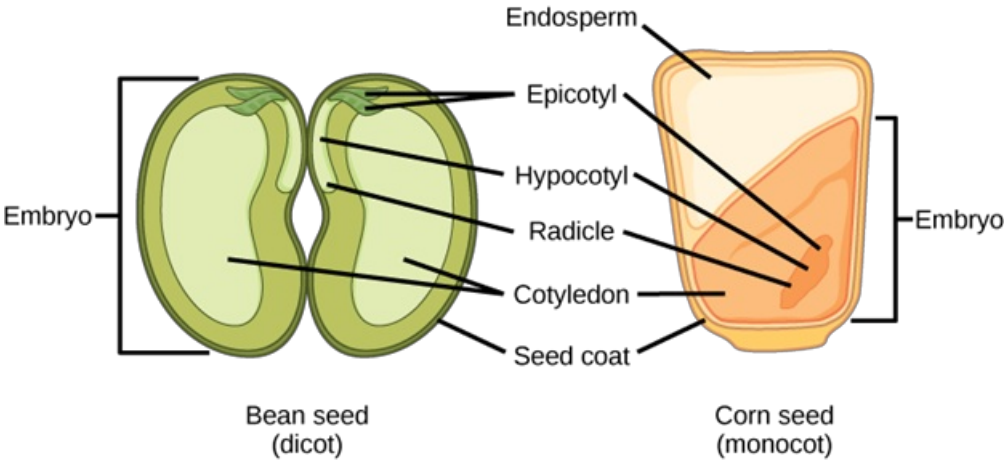
ii. Plumule

iii. Cotyledon

iv. Seed coat

v. Micropyle

The diagram is



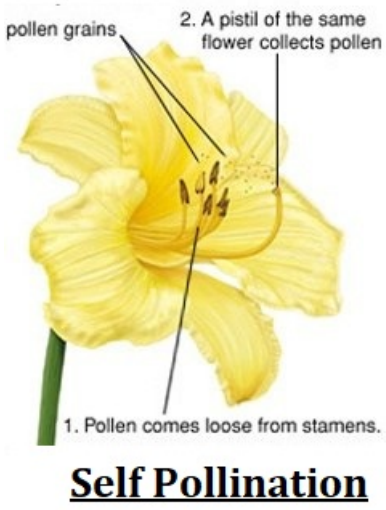
17. Question

What are the types of pollination? Which among them is more advantageous? Why?

Answer

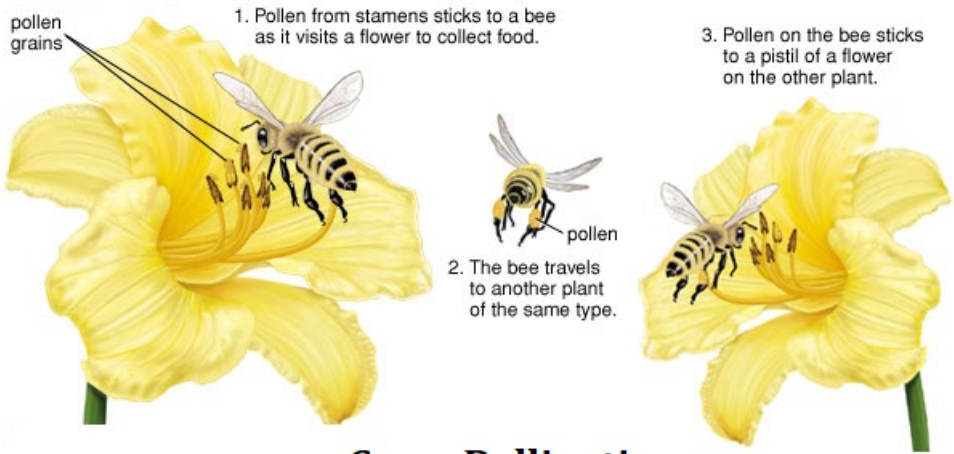
- Pollination is of two types – Self-pollination and cross pollination.

Self-pollination: - In self-pollination, pollen from anther of one pollination lands on the stigma of same flower. It is also known as autogamy. E.g. Wheat, barley etc.



Cross- pollination: - In cross-pollination pollen from anther of one flower lands on the stigma of other flower by the means of water or animals or wind. It is also known as allogamy. E.g. grasses etc.

Cross pollination is more advantageous because in this type of pollination there are chances of formation of new varieties of seeds and more viable seeds. Along with this there are chances that bad characters of the parent plant may get eliminated and won’t pass to next generation.



Cross Pollination

18. Question

What is self-pollination? Mention its merits and demerits.

Answer

- **Self-pollination**: - In self-pollination, pollen from anther of one pollination lands on the stigma of same flower. It is also known as autogamy. E.g. Wheat, barley etc.

Advantages: - 1. Pollination does not depend on other agents.

2. no pollen wastage.

Disadvantage: - 1. No new variety.

2. new plants are weak.

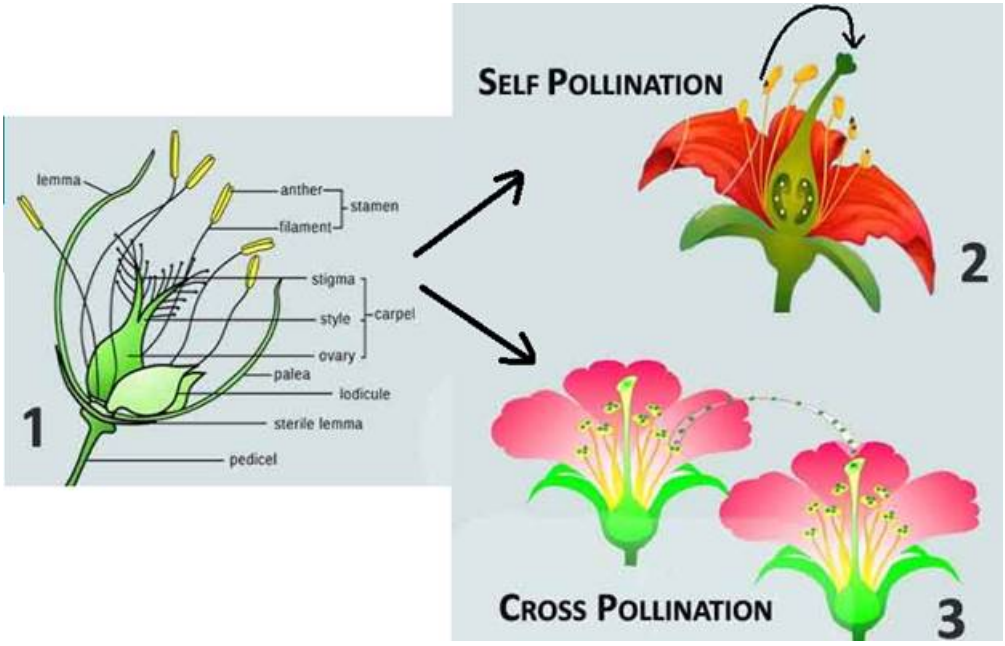
Self Pollination

19. Question

What is known as pollination? List out biotic and abiotic factors which are involved in pollination?

Answer

Pollination is the process of transfer of pollen from the anther to the stigma of the flower. It is of two types – Self-pollination and cross-pollination.



Biotic factors:- In biotic factors, there is need to attract the pollinators to carry the process of pollination. Insects, animals, and birds are some of the biotic factors.

Abiotic factors: - In this, there is no need to attract the pollinators for the process of pollination. Wind and water are abiotic factors.