INDIAN SCHOOL AL WADI AL KABIR		
CLASS: VII	**DEPARTMENT: SCIENCE 2023-24**	**DATE: 01/02/2024**
WORKSHEET NO: 16 WITH ANSWERS	**TOPIC REPRODUCTION IN PLANTS**	**NOTE: A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS & SEC:**	**ROLL NO.**

I. OBJECTIVE-TYPE QUESTIONS:

1. The addition of yeast to bread dough makes it raised by increasing its volume, and the growth of fungus takes place on bread slices when it is left for a longer time in moisture. A researcher took samples from the dough of bread on slide A, and from old bread on slide B. The researcher observed the growth of these organisms under the microscope. What type of asexual reproduction might have been observed by the researcher on both slides?

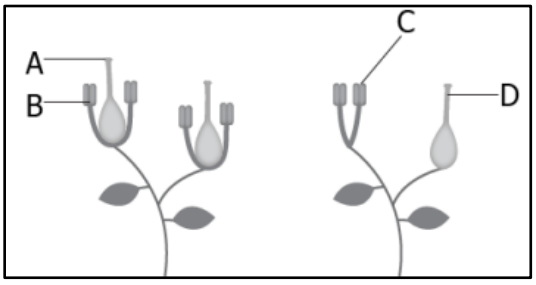
   a) Slide A- Budding, Slide B-Fragmentation

   b) Slide A- Spore formation, Slide B-Budding

   c) Slide A- Budding, Slide B-Spore Formation

   d) Slide A- Fragmentation, Slide B-Spore Formation

2. The image represents the female and male reproductive parts of two different flowers.



   A teacher asked a student to identify the label that represents a pollen grain containing part of a bisexual flower. Which label should be chosen by the student?

   a) Label A **b) Label B**

   c) Label C d) Label D

3. Two students were asked to grow different plants. Student A used the stem of a rose plant and buried it in the soil to make a new plant. Student B used the seed of a cucumber plant and buried it in the soil to grow a new one. After a few weeks, the growth of a rose plant and a cucumber

plant was observed. What mode of reproduction took place in the plants chosen by student A and student B?

a) Student A- Sexual reproduction; Student B- Sexual reproduction

b) Student A- Sexual reproduction; Student B- Asexual reproduction

c) Student A- Asexual reproduction; Student B- Sexual reproduction

d) Student A- Asexual reproduction; Student B- Asexual reproduction

4. Which of the following statements correctly defines the term "reproduction"?

a) Production of new individuals from parents

b) An increase in height and weight of an organism

c) The ability of an organism to withstand unfavourable conditions

d) The development of an individual physiologically and emotionally

5. A potato plant does not produce seeds, but it produces new plants using vegetative propagation. The table lists some parts of a potato plant.

• Flowers • Leaves • Eyes of potato • Cutting of its stem

What plant part governs asexual reproduction in a potato plant?

a) Flowers

b) Leaves

c) Eyes of potato

d) Cutting of stems

6. Pollination refers to the:

a) Transfer of pollen from anther to ovary

b) Transfer of female gametes from anther to style

c) Transfer of pollen from anther to stigma

d) Transfer of pollen from stigma to anther

For the questions that follow, two statements are given: - one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:

i) Both A and R are true and R is the correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true

7. **Assertion (A):** A bisexual flower has both male and female reproductive parts.

   Reason (R): The fusion of male and female gametes is called pollination.

   (iii) A is true but R is false.

8. **Assertion (A):** Some plants reproduce by growing vegetative parts into new plants.

   Reason (R): Anther contains pollen grains which produce female gametes.

   (iii) A is true but R is false.

9. **Assertion (A):** Spores are reproductive structures in some fungi.

   Reason (R): Spores have thick walls to survive unfavourable conditions.

   (ii) Both A and R are true but R is not the correct explanation of the assertion.

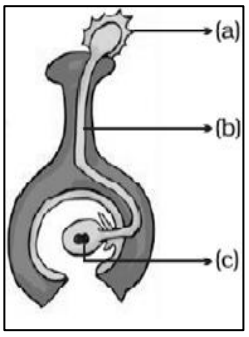
10. **Assertion (A):** Flowers pollinated by insects are colourless and small in size.

    Reason (R): Seeds with spines are dispersed by humans and animals.

    (iv) A is false but R is true

II. VERY SHORT ANSWER TYPE QUESTIONS (2M):

1. What is a bud in a yeast cell? **[Hint: A small bulb-like projection coming out from the yeast cell is called a bud.]**
2. In the figure given below, label the parts marked (a), (b) and (c).



[Hint: a- Pollen grain, b- Pollen tube, c- Zygote.]

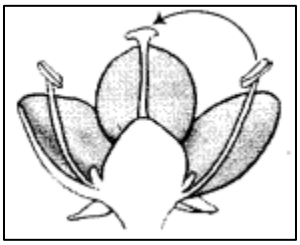
3. Explain fragmentation with an example. **[Hint: It is a mode of asexual reproduction. An alga breaks into two or more fragments. These fragments grow into new individuals. This process continues and they cover a large area in a short period of time.]**
4. Why do farmers leave space between the seeds while sowing them? **[Hint: To avoid overcrowding and to avoid scarcity of nutrients, light, air and space for the seeds.]**
5. What are the advantages of vegetative propagation?

   [Hint: i) Plants produced by vegetative propagation take less time to grow and bear flowers and fruits earlier than those produced from seeds.

ii) The new plants are exact copies of the parent plant, as they are produced from a single parent.]

6. How does a new plant grow by budding? **[Hint: In this method, a small bulb-like projection comes out from the parent yeast cell. It is called a bud. The bud gradually grows and gets detached from the parent cell and forms a new yeast cell. This new yeast cell grows, matures and produces more yeast cells.]**
7. How do fungi and fern plants reproduce to give rise to new plants? **[Hint: They grow by the process of spore formation. Each spore is covered by a hard-protective coat to withstand unfavourable conditions. Under suitable conditions spores germinate and develop into new individuals.]**
8. Which type of pollination does the given figure indicate?

   [Hint: The given figure shows self-pollination, as the pollen grains from the anther of the flower are transferred to the stigma of the same flower.]



9. What is the significance of dispersal of seeds? **[Hint: Seed dispersal avoids overcrowding of young plants around their parent plants. It helps in preventing competition between the plants and their seedlings for sunlight, water and minerals. One of the benefits of seed dispersal is that it enables the plant to grow into new habitats for wider distribution and provides them with a better chance of survival.]**

III. SHORT ANSWER TYPE QUESTIONS (3M):

1. What are the post-fertilisation changes in a flower? **[Hint: After fertilisation, the ovary grows into a fruit and other parts of the flower fall off. The ripened ovary is called fruit. The seeds develop from the ovules. The seed contains an embryo, which is formed from a zygote due to the fusion of male and female gametes. The embryo develops into a future plant on getting favourable conditions.]**
2. One morning as Rashi strolled in her garden she noticed many small plants, which were not there a week ago. She wondered, where they had come from as nobody had planted them there. Explain the reason for the growth of these plants. **[Hint: The small plants which were not there in the garden a week ago may have grown up due to the seed dispersal. The**

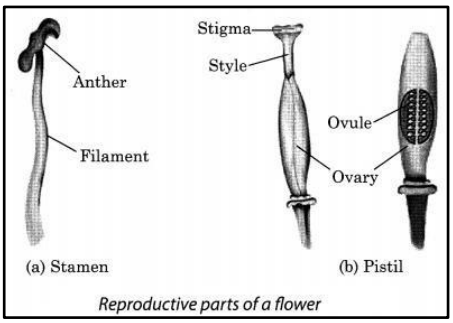
seeds from the tree may have fallen below or have been dispersed by wind or animals on the ground, which on germination developed into new small plants.]

3. Boojho had the following parts a rose plant leaf, root, a branch, a flower, a bud and pollen grains. Which of them can be used to grow a new rose plant?

   [Hint: The branch can be used to grow a new rose plant, as the rose reproduces through vegetative propagation by stem cutting method. The lower end of the stem cutting is buried in soil and the upper part having the bud is kept above the ground. The planted cutting is watered every day. After a few days, the cutting in soil develops roots and buds and produces a shoot. In this way a branch cutting of a rose plant grows to become a new rose plant.]

IV. LONG ANSWER TYPE QUESTIONS (5M):

1. Explain the reproductive parts of a flower with a labelled diagram. **[Hint: Flowers are the reproductive parts of a plant. The stamens are the male reproductive part and the pistil is the female reproductive part. Anther contains pollen grains which produce male gametes. A pistil consists of a stigma, style and ovary. The ovary contains one or more ovules. The female gamete or the egg is formed in an ovule. In sexual reproduction a male and a few female gamete fuses to form a zygote.]**



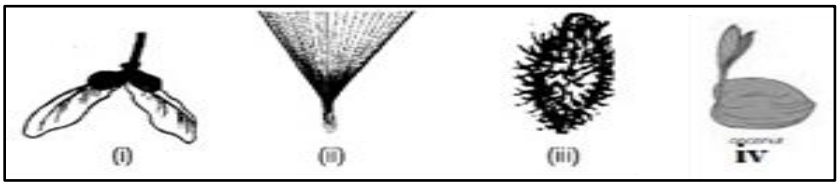
Reproductive parts of a flower

2. Group the seeds given in Figure (i) to (iv) according to their means of dispersion.

   a) Seed dispersed by wind

   b) Seed dispersed by water

   c) Seed dispersed by animal.



[Hint: The seeds and their means of dispersal are:

a) <u>Seed dispersed by wind</u> - (i) the seed of maple- winged seed which is light in weight. and ii) seed of aak- hairy outgrowth, which makes it lighter can be dispersed by wind.

b) <u>Seed dispersed by water</u> - (iv) Coconut- Seeds having spongy form and floating ability are dispersed by water to different places.

c) Seed dispersed by animals - (iii) Seed of Xanthium- are spiny with hooks on them which get attached to the bodies of animals and are carried to distant places.]

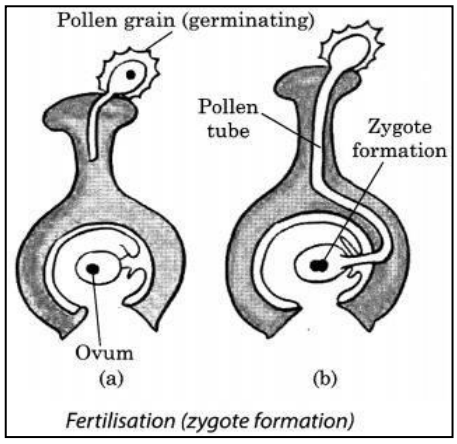
3. Differentiate between:

   a) Unisexual flowers and bisexual flowers **[Hint: Unisexual flower refers to the flowers which contain either stamen or pistil. Example: Papaya flowers. A bisexual flower refers to a flower which has both stamen and pistil. Example: Hibiscus.]**

   b) Self-pollination and cross-pollination **[Hint: Self-pollination occurs when the pollen from the anther is deposited on the stigma of the same flower or another flower on the same plant. Cross-pollination is the transfer of pollen from the anther of one flower to the stigma of another flower on a different plant of the same species.]**

   c) Sexual and asexual reproduction **[Hint: Sexual reproduction-The mode of reproduction in which new plants are produced from seeds by involvement of both male and female gametes. Asexual reproduction-In this mode of reproduction, new plants are produced without seeds by the involvement of a single parent.]**

4. What is meant by the term fertilisation? List the stepwise manner leading to the formation of a Zygote.



Fertilisation (zygote formation)

[Hint: The process in which the male gamete fuses with the female gamete to form a new cell (called zygote) is called fertilisation. Sexual reproduction (fertilisation) in plants -the different steps that take place during sexual reproduction in plants are:

i) The pollens are deposited on the stigma and begin to germinate.

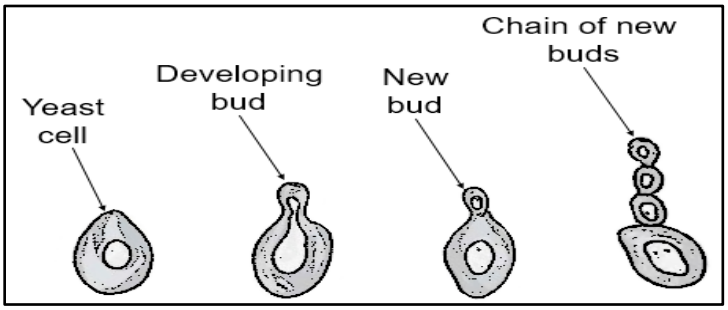
ii) Pollen tube containing male gametes reaches the ovary of the flower.

iii) The tip of the pollen tubes gets dissolved and male gametes come out of the pollen tube.

iv) Inside the ovary male gametes fuse with the female gamete or egg present in the ovule.

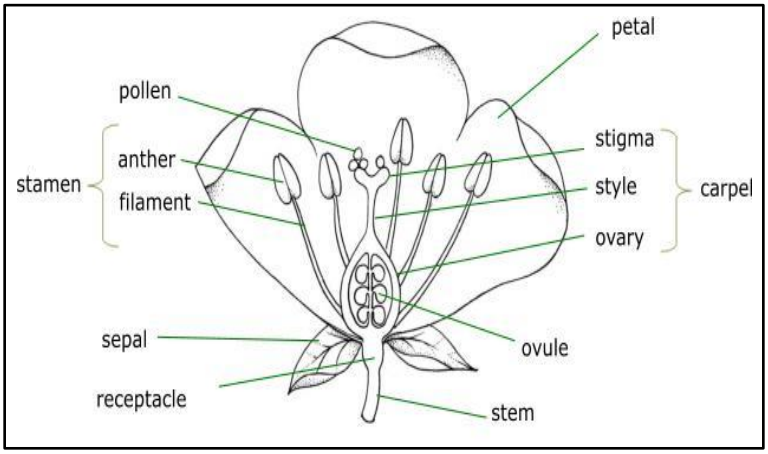
v) The fusion of both the gametes will result in a fertilised egg cell which is also called a zygote.]

5. a) Draw a diagram to show reproduction in yeast.



b) Which type of reproduction takes place in yeast? **[Hint: The asexual reproduction.]**

6. Sketch the parts of a flower



V. CASE STUDY- BASED QUESTIONS/ PASSAGE BASED QUESTIONS:

Read the passage carefully and answer the questions:

1. The production of new individuals from their parents is known as reproduction. Most plants have roots, stems and leaves. These are called the vegetative parts of a plant. After a certain period of growth, most plants bear flowers. You may have seen the mango trees flowering in spring. It is these flowers that give rise to the juicy mango fruit we enjoy in summer. We eat the fruits and usually discard the seeds. Seeds germinate and form new plants. Flowers perform the function of reproduction in plants. Flowers are their productive parts.

   There are several ways by which plants produce their offspring. These are categorized into two types: (i) asexual, and (ii) sexual reproduction. In asexual reproduction, plants can give rise to new plants without seeds, whereas in sexual reproduction, new plants are obtained from seeds.

   a) Name the vegetative parts of a plant. **[Hint: stems, leaves, buds and roots.]**

   b) What is reproduction? Name the methods by which the plants reproduce.

[Hint: Reproduction is the process by which individuals produce young ones of their kind. There are mainly two types of reproduction- asexual and sexual.

Asexual reproduction includes vegetative propagation, budding, fragmentation, and spore formation.

Sexual reproduction involves Pollination and fertilization.]

2. Seeds and fruits of plants are carried away by wind, water and animals. Some seeds have wings, hair and are lightweight and are dispersed by wind. Examples are grass, cotton dandelion and drumstick. Seeds dispersed by water have air trapped between the fibres that help them to float in water like coconut. Some seeds are eaten by animals and their seeds are passed out through the wastes of animals. Seeds like Xanthium are hooked and get stuck to the fur of animals to get dispersed. Some plants explode their seeds to scatter at certain distances like castor, balsam etc.

   a) Name a plant which scatters its seeds by explosion.

   i) Banana **ii) Castor** iii) Rose iv) Mogra

   b) Identify the seed dispersed by wind.

   i) Grass ii) Drumstick iii) Coconut **iv) Both i and ii**

   c) What helps coconut to float in water?

   i) Wings ii) Lightweight **iii) Air trapped between its fibres** iv) Water current

   d) What special feature in Xanthium helps in its dispersal?

   i) Wings **ii) Hooks** iii) Lightweight iv) All of these

PREPARED BY Mr VIKRANT PURANDARE	CHECKED BY HoD SCIENCE