



Class: VII	DEPARTMENT OF SCIENCE - 2022-2023	DATE:8/02/2023
<b>WORKSHEET NO: 17 WITH ANSWERS</b>	<b>TOPIC: REPRODUCTION IN PLANTS</b>	<b>NOTE: A4 FILE FORMAT</b>
NAME OF THE STUDENT:	CLASS & SEC:	ROLL NO.

**I. VERY SHORT ANSWER TYPE QUESTIONS (1M):**

1. What is a bud? **[Hint: A small bulb-like projection coming out from the yeast cell is called a bud].**
2. Which method of asexual reproduction does sweet potato reproduce? **[Hint: Vegetative propagation(root)]**
3. What are produced by plants as a result of sexual reproduction? **[Hint: Seeds.]**
4. Fungus, moss and fern reproduces by a common method of asexual reproduction. Name the method. **[Hint: Spore formation]**
5. Name the vegetative parts of a plant **[Hint: stems ,leaves ,buds and roots ]**
6. What does the term Pollination refer to? **[Hint: Transfer of pollen from anther to stigma of a flower.]**
7. A pond with clear water was covered with green algae within a week. By which method of reproduction did the algae spread so rapidly? **[Hint: Fragmentation]**
8. What does a mature ovary develop into? **[Hint: A fruit]**
9. What produces male gamete? **[Hint: Pollen grain produces male gamete.]**

***For the questions that follows, 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*

10. Assertion (A): Some plants reproduced 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.**

11. 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.**

12. 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. PASSAGE BASED QUESTIONS:**

**Read the passage carefully and answer the questions:**

1. Seeds and fruits of plants are carried away by wind, water and animals. Some seeds have wings, hair and light weight and are dispersed by wind. Examples are grass, cotton dandelion and drum stick. Seeds dispersed by water have air trapped between its fibres that help it 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 distance 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) Light weight    **iii) Air trapped between its fibres**    iv) Water current

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

i) Wings    **ii) Hooks**    iii) Light weight    iv) All of these

2. After fertilization, the ovary grows into fruit and other parts of the flower fall off. The fruit is the ripened ovary. Seeds develop from ovules and contains an embryo enclosed in a protective seed coat. Some coats are fleshy and juicy like mangoes while some are hard like almonds and walnuts.

a) Identify a hard fruit-

i) Apple    ii) Potato    **iii) Walnuts**    iv) Drumstick

b) What forms the fruit?

- i) Flower   **ii) Ripened ovary**   iii) Seed coat   iv) Ovules

c) What does the seed contain?

- i) A plant   **ii) An embryo**   iii) Seed coat   iv) Ovary

### **III. CASE STUDY BASED QUESTIONS**

1. When you keep food items like bread and fruits outside for a long time especially during the rainy season, you will observe a cottony growth on them.

a) What is this growth called? **[Hint: When food items like bread and fruits are kept outside for a long time especially during rainy season, a cottony growth of bread mould, a fungus is observed.]**

b) How does the growth take place? **[Hint: This growth of fungus takes place by spores present in air, which when comes in the contact with moisture in bread germinates and grow to produce new cells.]**

2. Megha had two plant parts with her. Part A sprouted using its eyes while plant Part B started sprouting from its leaf margins.

a) What could be part A?

- i) Tomato   **ii) Potato**   iii) Ginger   iv) Turmeric

b) Identify the plant part B

- i) Rose   b) Lily   **c) Bryophyllum**   d) Cactus

### **IV. a) SHORT ANSWER TYPE QUESTIONS (2M):**

1. 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]**

2. 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]**

3. What are the advantages of vegetative propagation?

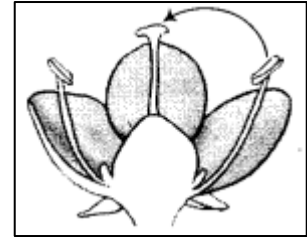
**[Hint: i) Plants produced by vegetative propagation take less time to grow and bear flowers and fruits earlier than those produced from seeds**

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

4. 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]

5. 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 unfavorable conditions. Under the suitable conditions spores germinate and develop into new individuals]

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



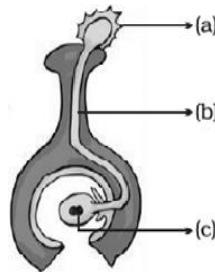
7. What is the significance of dispersal of seeds? [Hint: Seed dispersal avoids overcrowding of young plants around their parent plants. It helps in preventing competition between the plants and its own seedlings for sunlight, water and minerals. One of the benefits of seed dispersal is that it enables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

#### **IV. b) SHORT ANSWER TYPE QUESTIONS (3M):**

1. One morning as Paheli 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.]

2. In the figure given below, label the part marked (a), (b) and (c).



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

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

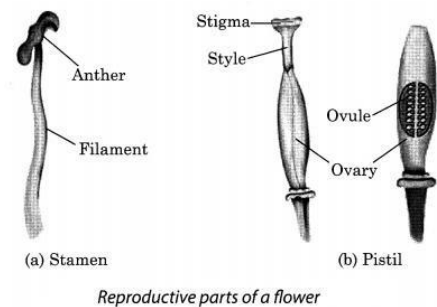
[Hint: Reproduction is the process by which individuals produce young ones of their own kind. There are mainly two types of reproduction- asexual and sexual. Asexual reproduction includes vegetative propagation, budding, fragmentation, spore formation. Sexual reproduction involves- Pollination and fertilization.]

4. Boojho had the following parts of a rose plant-a leaf, roots, 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 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 bud produces a shoot. In this way a branch cutting of a rose plant grows to become a new rose plant.]

### V. 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 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 fuse to form a zygote. ]



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) Seed dispersed by wind - (i) the seed of maple- winged seed which are light in weight. and ii) seed of aak- hairy outgrowth, which makes it lighter can be dispersed by wind.
- b) Seed dispersed by water- (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 gets attached to the bodies of animals and are carried to distant places.]

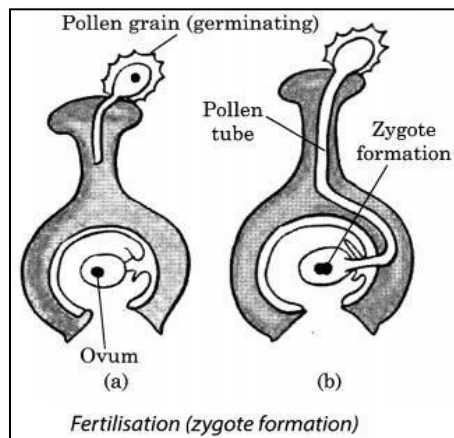
3. Differentiate between:

a) Unisexual flowers and bisexual flowers [Hint: Unisexual flower refers to the flowers which contain has either stamen or pistil. Example: Papaya flowers. Bisexual flower refers to the 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 involvement of single parent.]

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



[Hint: The process in which the male gamete fuses with 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 stigma and begins to germinate.

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

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

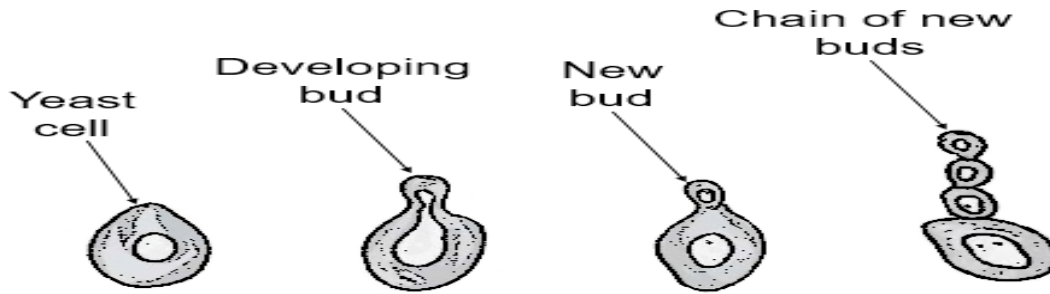
iv) Inside the ovary male gametes fuse with the female gamete or egg present in the ovule.

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

5. What are the post fertilisation changes in a flower?

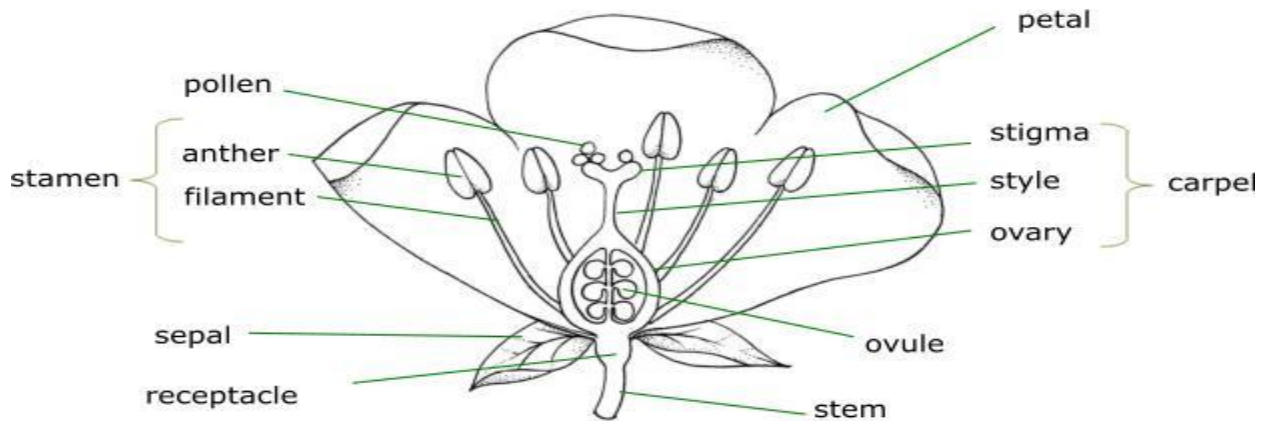
[Hint: After fertilisation, the ovary grows into a fruit and other parts of the flower fall off. The ripened ovary is called fruit. The seeds develop from the ovules. The seed contains an embryo, which is formed from zygote due to fusion of male and female gametes. The embryo develops into future plant on getting favourable conditions.]

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



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

7. Sketch the parts of a flower



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