Unit 11 · Asexual Reproduction

WORKSHEET

Full marks 32

Name _____ Class _____ Roll no. _____ Date _____ Marks _____ / 32

1 Key words [4]

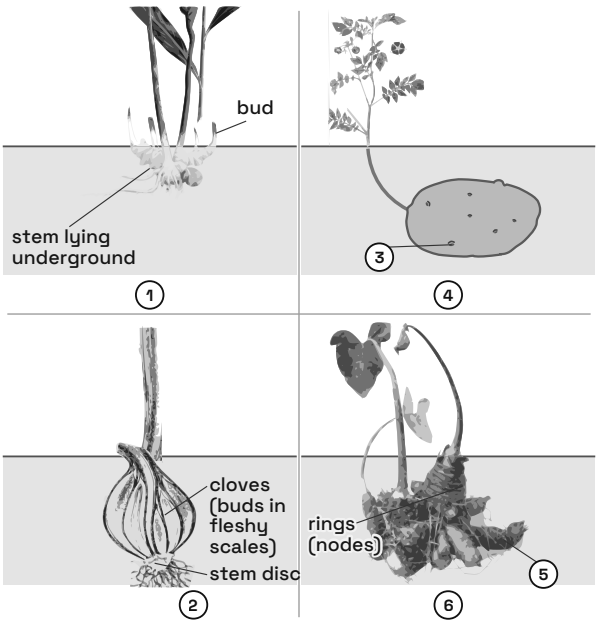
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

agamospermy	**asexual**	**clone**	**explant**	**offset**	**parthenocarpy**	**rhizome**	**scion**	**stock**
zygote								

Reproduction without the fusion of gametes is _____ reproduction, and its offspring, identical to the one parent, form a _____. The formation of seeds without fertilization is _____. A stem growing horizontally under the ground, as in ginger, is a _____. A short, thick, one-internode runner ending in a rosette, as in water hyacinth, is an _____. In grafting, the upper part, whose fruits are wanted, is the _____, and the rooted lower part is the _____. The small piece of a plant from which tissue culture starts is the _____.

2 Label the diagram [3]

The diagram shows four underground stems. Write the kind of stem (with its plant) or the part for 1 to 6. Each carries 0.5 mark.



1. _____ 2. _____

3. _____ 4. _____

5. _____ 6. _____

3 Multiple choice [5]

Choose the correct option for each of the following questions.

i. In adventive (nucellar) embryony, which cell grows into the embryo? [1]

a. a haploid egg cell, without fertilization
b. the zygote
c. a diploid cell of the nucellus or integument
d. a diploid egg in an embryo sac formed without meiosis

ii. A gardener cuts a potato into pieces to plant. Which pieces will grow? [1]

a. any piece, since every part of a tuber can make a shoot
b. only pieces with at least one eye
c. only the piece from the end that was attached to the plant
d. none: a tuber must be planted whole

iii. Why is a ring of bark removed in air layering? [1]

a. to let rainwater into the branch
b. to stop water reaching the leaves above
c. to cut the phloem, so food and auxin collect at the wound and roots form there
d. to kill the branch above the ring

iv. In a grafted mango tree, which part decides the taste of the fruit? [1]

a. the stock, because it supplies water and minerals
b. the scion, because the fruit grows on it from its own buds
c. both equally, since they become one plant
d. neither: the fruit's taste is set by the soil

v. A rare orchid has only a few plants left. Why is micropropagation better than seeds or cuttings for saving it? [1]

a. it changes the orchid's genes so that it survives better
b. it can give thousands of plants from a few small pieces, quickly and free of disease
c. it needs no laboratory or special care
d. it makes the orchid produce more seeds

4 Short answers [9]

Write short answers to the following questions.

a. Differentiate between a bulb and a corm, with one example of each. [2]

b. A sweet potato and a potato both store food underground. Which is a root and which a stem? How can you tell? **[2]**

c. A farmer wants many plants of a good mango variety that fruit soon. Should he sow its seeds or graft it? Give two reasons. **[2]**

d. What is agamospermy? Describe its three kinds. **[3]**

5 Long answers **[8]**

Write long answers to the following questions.

a. What is layering? Describe its four kinds. **[4]**

b. Write any four advantages and any four disadvantages of vegetative propagation. **[4]**

6 Think **[3]**

The Cavendish banana sold all over the world is a single clone. Explain why this makes it convenient for farmers, and why plant scientists worry about it.

7 Activity: A leaf that makes plants (not marked)

Lay a leaf of pattharchatta (*Bryophyllum*) flat on a saucer of moist soil, underside down, in a bright place out of direct sun. Keep the soil just moist and look at it every two days for three weeks.

Day	What you saw at the notches of the leaf
4	
8	
14	
21	

Where did the new plants come from, and what kind of propagation is this?