

CLASS-XII

SUBJECT: BIOLOGY HOLIDAY HOMEWORK

Chapter-I: Reproduction in Organisms

- (1) A moss plant is unable to complete its life cycle in a dry environment. State two reasons.
- (2) With which type of reproduction do we associate the reduction division? Analyse the reasons for it.
- (3) In an experiment, Mr. John dissected a large potato tubes into several small pieces & then placed each piece in a separate pot for germination. After few days, he observed that a few pieces germinated & developed new-plants. The others did not germinate at all. Give possible reasons.
- (4) a) What is common between vegetative reproduction & apomixis.
b) Name the organisms in which external fertilization takes place.
- (5) One day, Ramesh was standing in the kitchen with his mother who was cutting onions for making vegetables. He observed that in some of onion bulbs, green leaves appeared on upper end & roots on the lower end. In the evening, he shared his observations and discussed with his father, a Botany teacher. His father explained that in case of onion, new plants develop through asexual reproduction.

Read the above passage and answer the following questions:-

- i) What is the name of this type of Propagation?
- ii) Can this method be used for raising onion plants at home also?
- iii) Name some other vegetables which are propagated by using bulbs.
- iv) What value is displayed by Ramesh's father?

Chapter 2- Sexual Reproduction in Flowering Plants

- (1) Name the pollinating agent of flowers like salvia, sunflower. Give two favorable features of such a flower for pollination.
- (2) Give characteristics of insect pollinated flowers.
- (3) Name the pollinating agents of flowers like maize and wheat. Give any two characteristic features of such a flower.
- (4) An anther with malfunctioning tapetum often fails to produce viable male gametophytes. Give any one reason.

- (5) Name the following structures
- a) Single cotyledon of the monocotyledonous embryo of grass family.
 - b) The portion of embryonal axis above the level of cotyledons in dicot embryo.
 - c) Occurrence of more than one embryo in a seed.
 - d) Seedless fruits produced without fertilization.
- (6) Is it possible to store pollen grains? What do we call the process of pollination using pollen grains of desired plant?
- (7) Do you think that microspores & pollen grains are the same structures? If they are different then what is the basic difference between them.
- (8) Each pollen grain produces two male gametes. How many pollen grains will be required to fertilize 4 ovules present in a particular carpel? Give reasons.
- (9) A flower of tomato plant, following the process of sexual reproduction, produces 200 viable seeds.

Answer the following question giving reasons:-

- a) What would have been the minimum no. of ovules present in per- pollinated pistil?
- b) How many microspore mother cells would minimally be required to produce requisite number of pollen grains?
- c) How many pollen grains must have minimally pollinated the carpel?
- d) How many male gametes would have used to produce these 200 viable seeds?
- e) How many megaspore mother cells were required in this process?