INDIAN SCHOOL AL WADI AL KABIR

Class: XII	**Department: SCIENCE 2021 -22** **SUBJECT : BIOLOGY**	**Date of submission:** **06.05.2021**
Worksheet No: 01 **WITH ANSWERS**	**UNIT: REPRODUCTION** **Chapter: Sexual Reproduction in Flowering Plants**	**Note:** **A4 FILE FORMAT**
NAME OF THE STUDENT	**CLASS & SEC:**	**ROLL NO.**

ONE MARK QUESTIONS

1. Angiosperm anther is bilobed and dithecous. Justify
2. Distinguish between pericarp and perisperm
3. Identify the step which is not necessary for the artificial hybridisation of unisexual flowers. Give reason
4. What is scutellum?
5. Give any two examples for hydrophytes which are not pollinated through water.

TWO MARKS QUESTIONS

1. What will be the advantage of making the hybrids into apomicts? Why?
2. Are pollination and fertilization necessary in apomixis? Give reason.
3. The flower of brinjal is chasmogamous, while that of beans is cleistogamous. How are they different from each other?
4. Differentiate between albuminous and non-albuminous seeds, giving one example of each.
5. Differentiate between perisperm and endosperm giving one example.

THREE MARKS QUESTIONS

1. State the significance of pollination. List any four differences between wind pollinated and insect pollinated flowers?
2. Banana is a parthenocarpic fruit, whereas oranges show polyembryony. How are they different from each other with respect to seeds?
3. (i) Where is Sporopollenin present in plants?
   ii) State its significance with reference to its chemical nature.

iii) Why can pollen grain be preserved for many years.

4. Why do pollen grains of some flowers trigger “sneezing” in some people?
5. Write notes on different types of endosperm development

FIVE MARKS QUESTIONS

1. Give reasons why:
   (a) Most zygote in angiosperms divide only after certain amount of endosperm is formed.
   (b) Ground nut seeds are ex-albuminous and castor seeds are albuminous
   (c) Micropyle remains as a small pore in the seed coat of a seed.
   (d) Integuments of an ovule harden and the water content is highly reduced, as the seed matures.
   (e) Apple and cashew are not called true fruits.

2. With the help of a neat labelled diagram explain the wall layers of a mature anther of angiosperms
3. Illustrate the process of megasporogenesis and embryo sac development

PREVIOUS BOARD QUESTIONS

1. Explain any three advantages the seeds offer to angiosperms.
2. Name the product of fertilization that forms the kernel of coconut. How does the kernel differ from coconut water?
3. Write the cellular contents carried by the pollen tube. How does the pollen tube gain its entry into the embryo sac?
4. Draw a labeled schematic diagram of the transverse section of a mature anther of an angiosperm plant.
5. a) Describe in sequence the process of megasporogenesis in angiosperms.
   (b) Draw the seven celled structure formed and label all the different cells.
6. Draw a labeled diagram of globular embryonic stage of angiosperms.
7. Draw a diagrammatic sectional view of a mature anatropous ovule and label the following parts in it:

   (i) that develops into seed coat.

   (ii) that develops into an embryo after fertilization.

   (iii) that develops into an endosperm in an albuminous seed

   (iv) through which the pollen tube enters the embryo sac.

   (v) that attaches the ovule to the placenta.

ANSWERS

ONE MARK QUESTIONS

1. **(Hints: Bilobed – two anther lobes, dithecous – each lobe consists of two chambers)**
2. **(Hints: Pericarp – fruit wall, perisperm – remnant of nucellus in seed)**
3. **(Hints: Emasculation)**
4. **(Hints: Single shield shaped cotyledon of monocots)**
5. **(Hints: Water Lilly and water hyacinth)**

TWO MARKS QUESTIONS

1. **(Hints: To prevent the segregation of desirable characters)**
2. **(Hints: No, it is the development of seeds without fertilisation, from parts like nucellus)**
3. **(Hints: Brinjal – flowers are exposed and cleistogamous – unopened flowers to ensure pollination)**
4. **(Hints: Seeds are with endosperm – albuminous, Seeds are without endosperm – non-albuminous, examples)**
5. **(Hints: Perisperm – remnant of nucellus in seed, endosperm – reserve food material for embryo; examples)**

THREE MARKS QUESTIONS

1. **(Hints: Pollination is necessary for fertilisation. Differences between wind and insect pollinated flowers)**
2. **(Hints: Banana – fruits are formed without fertilisation and hence seedless fruits, orange – seeds consist of more than one embryo)**
3. **(Hints: (i) Exine of microspores**
   (ii) Highly stable and thus pollen grains are even preserved in fossils
   (iii) Due to the presence of sporopollenin)
4. **(Hints: Nature of pollen grains, causing allergic responses)**
5. **(Hints: Nuclear type of endosperm development and cellular type of development)**

FIVE MARKS QUESTIONS

1. **(Hints: (a) Provides nutrition for embryo**

(b) Absence and presence of endosperm
(c) Facilitates moisture and oxygen entry
(d) Helps in the storage of seeds for long time
(e) Developed from thalamus and not from fertilised ovary)

2. (Hints: Diagram and explanation of wall layers – epidermis, endothecium, middle layers and tapetum)

3. (Hints: Represent the diagrammatic stages of megaspore and embryo sac development)

PREVIOUS BOARD QUESTIONS

1. **(Hints: Product of sexual reproduction and thus provides variations, Dormancy and thus can be stored, pollination and fertilisation are not depending on water)**
2. **(Hints: Product of fertilisation – PEN, nuclear endosperm development, wall formation limited to peripheral sides, central free nuclei)**
3. **(Hints: 2 male gametes, chemotropism, enters into ovule through Micropyle and embryo sac with the help of filiform apparatus in synergid)**
4. **(Hints: Diagram)**
5. **(Hints: (a) formation of megaspore mother cell, meiosis, spore tetrad formation and formation of megaspores)**
6. **(Hints: Diagram)**
7. **(Hints: (i) Diagram + label (i) integuments, (ii) egg, (iii) polar nuclei, (iv) filiform apparatus, (v) funicle)**

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