



ACADEMIC WORLD SCHOOL™

BEMETARA

SUMMER VACATION ASSIGNMENT

SESSION 2020-21

CLASS: XII

SUBJECT- BIOLOGY

General Instructions

- (i) There are a total of 44 questions and four sections in the Assignment.
- (ii) Section A contains question numbers 1 to 7, multiple choice questions of one mark each.
Section B contains question numbers 7 to 18, short answer type I questions of two marks each.
Section C contains question numbers 19 to 34, short answer type II questions of three marks each.
Section D contains question numbers 35 to 44, long answer type questions of five marks each.
- (iii) Read the question carefully and write descriptive answers. Draw well labeled Diagram wherever required.

Section-A (One Mark)

1. Which of the following is not correct about artificial means of vegetative propagation
 - i. Quick production of new plants
 - ii. Economical
 - iii. Genetic variation
 - iv. Combining good qualities of two different varieties
2. A dioecious flowering plant prevents both
 - a) Autogamy and xenogamy
 - b) Autogamy and geitonogamy
 - c) Geitonogamy and xenogamy
 - d) Cleistogamy and xenogamy
3. Flagellated, motile asexual reproductive structure are called
 - i. Megaspores
 - ii. Aplanospores
 - iii. Zoospores
 - iv. Microspores

4. Attractants and rewards are required for

- a. Anemophily
- b. Entomophily
- c. Hydrophily
- d. Cleistogamy

5. Which one of the following statements is not true?

- a. Tapetum helps in the dehiscence of anther
- b. Exine of pollen grains is made up of sporopollenin
- c. Pollen grains of many species cause severe allergies
- d. Stored pollen in liquid nitrogen can be used in the crop breeding programmes

6. Geitonogamy involves

- a. fertilization of a flower by the pollen from a flower of another plant in the same population.
- b. fertilization of a flower by the pollen from a flower of another plant belonging to a distant population.
- c. fertilization of a flower by the pollen from another flower of the same plant.
- d. fertilization of a flower by the pollen from the same flower.

7. Cloning is a mode of

- i. Sexual production
- ii. Asexual production
- iii. Both I and II
- iv. None of these

Section-B (Two marks)

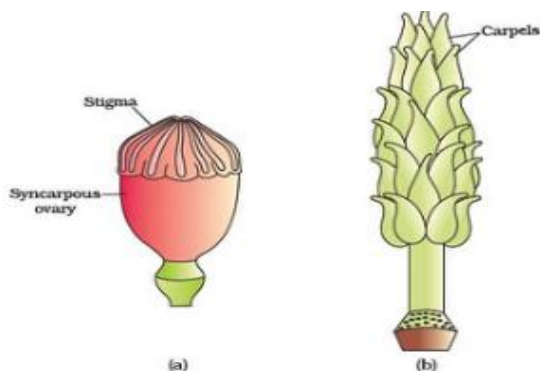
8. Define self-incompatibility. How do self-incompatible plants pollinate?

9. a. State the difference between meiocyte and gamete with respect to chromosome Number?

b. Why is a Whiptail lizard referred to as parthenogenesis?

10. Does apomixis require fertilization and pollination? Give reasons in support of your answer.

11. Mention the kind of carpel in the diagram given below.



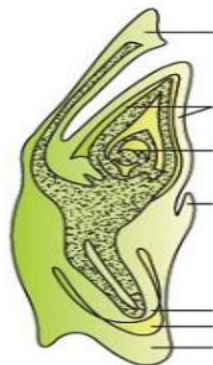
12. Name the haploid and diploid individuals in the family of honey bees and analyze the reasons behind their formation.

13. How do aquatic plants undergo pollination?

14. What are the stages of post-fertilization in plants?
15. Outer envelope of pollen grain made of a highly resistant material. Name that material . At which particular point the material is not present?
16. Fruits generally develops from ovary, but in few species thalamus contributes to fruit formation.
 - (a) Name the two categories of fruits.
 - (b) Give one example of each.
17. Differentiate between geitonogamy and xenogamy.
18. Is vegetative propagation considered a type of asexual reproduction? Give reasons.

Section-C (Three marks)

19. Why is syngamy a major event in sexual reproduction?
20. What are heterogametes? What do we call these gametes individually?
21. a. The cell division involved in gamete formation is not of the same type in different organisms. Justify?
b. Distinguish estrous cycle from menstrual cycle?
22. Where is sporopollenin present in plants? State its significance with reference to its chemical nature?
23. Bring out the difference between chasmogamous and cleistogamous flowers?
24. How do self-incompatibility restrict autogamy? How does pollination occur in such plants?
25. Is there any difference between apomixis and parthenocarpy? Explain the benefits of each.
26. Differentiate between 'oestrus' and 'menstrual' cycles.
27. How does a chasmogamous bisexual flower prevent self-pollination?
28. Label the following diagram



29. Why is it that the generative cell of 2-celled pollen divides in a pollen tube and not of 3-celled pollen?
30. Trace the development of microsporocyte into mature pollen grains.
31. i) Explain the structure of a maize grain with the help of a diagram
ii) Why cannot we use the term maize seeds for maize grains?
32. "Incompatibility is the natural barrier in fusion of gamete". Justify this statement.

