STD 6 Science

Questions and answers for Unit Test

Unit 3-Flower to flower

Part A: Multiple Choice Questions (20 marks)

1. Which part of the flower is typically green and protects the flower bud?
   a) Petals
   b) Stamens
   c) Sepals
   d) Pistils
   (1 mark)

2. Which part of the flower produces pollen?
   a) Ovary
   b) Stigma
   c) Anther
   d) Filament
   (1 mark)

3. What is the main function of petals?
   a) Protect the flower bud
   b) Produce pollen
   c) Attract pollinators
   d) Develop into seeds
   (1 mark)

4. Which of the following is a unisexual flower?
   a) Hibiscus
   b) Rose
   c) Pumpkin
   d) Lily
   (1 mark)

5. Which type of pollination involves the transfer of pollen from the anther to the stigma of the same flower?
   a) Cross-pollination
   b) Self-pollination
   c) Wind pollination
   d) Water pollination
   (1 mark)

6. What is the main purpose of the stigma in a flower?
   a) Produce pollen
   b) Capture pollen
   c) Support the anther
   d) Protect the ovary
   (1 mark)

7. Which of the following agents is not typically involved in pollination?
   a) Insects
   b) Wind
   c) Water
   d) Rocks
   (1 mark)

8. Which process involves the fusion of male and female gametes in a flower?
   a) Pollination
   b) Fertilization
   c) Germination
   d) Dispersal
   (1 mark)

9. Which part of the flower develops into a fruit?
   a) Stamen
   b) Pistil
   c) Ovary
   d) Sepal
   (1 mark)

10. Which of the following flowers is likely to be wind-pollinated?

a) Rose

b) Pine

c) Sunflower

d) Lily

(1 mark)

11. What is the function of the ovule in a flower?

a) Produce pollen

b) Capture pollen

c) Develop into a seed

d) Attract pollinators

(1 mark)

12. Which part of the flower becomes the seed after fertilization?

a) Ovule

b) Stigma

c) Anther

d) Petal

(1 mark)

13. Which flower characteristic is most likely to attract bees for pollination?

a) Bright colors

b) Strong scent

c) Large size

d) Wind resistance

(1 mark)

14. Which type of fruit develops from multiple ovaries of one flower?

a) Simple fruit

b) Aggregate fruit

c) Multiple fruit

d) Compound fruit

(1 mark)

15. Which structure connects the stigma to the ovary in a flower?

a) Anther

b) Filament

c) Style

d) Sepal

(1 mark)

16. Which type of pollination is most beneficial for genetic diversity?

a) Self-pollination

b) Cross-pollination

c) Wind pollination

d) Water pollination

(1 mark)

17. Which flower part is typically sticky to help capture pollen?

a) Stigma

b) Style

c) Anther

d) Ovule

(1 mark)

18. In the life cycle of a flowering plant, what comes immediately after pollination?

a) Seed dispersal

b) Germination

c) Fertilization

d) Fruit formation

(1 mark)

19. Which characteristic is least likely to be found in a wind-pollinated flower?

a) Large, colorful petals

b) Small, inconspicuous flowers

c) Large amounts of lightweight pollen

d) Long stamens and pistils

(1 mark)

20. What is the advantage of small flowers growing as an inflorescence?

a) Increased attraction of pollinators

b) Better protection from herbivores

c) Higher nectar production

d) Enhanced photosynthesis

(1 mark)

Part B: Short Answer Questions (15 marks)

1. Explain the role of the androecium in a flower.
   (2 marks)
2. Describe the process of fertilization in flowering plants.
   (3 marks)
3. What adaptations do flowers have to attract specific pollinators?
   (2 marks)
4. Compare and contrast wind pollination and insect pollination.
   (3 marks)
5. How does cross-pollination promote genetic diversity in plants?
   (2 marks)
6. Explain the reason why parts like petals, androecium, etc., wither and fall down after fertilization.
   (3 marks)

Part C: Application Level Questions (15 marks)

1. A plant species with brightly colored flowers is more successful in an environment with many insect pollinators. Explain why.
   (3 marks)

2. How would the process of pollination and fertilization be affected if the stigma of a flower were not sticky?
   (3 marks)
3. A farmer wants to ensure the cross-pollination of his apple trees. What strategies could he use to achieve this?
   (3 marks)
4. Consider a plant species that relies on water for seed dispersal. How might climate change, resulting in reduced water availability, affect this plant species?
   (3 marks)
5. Explain how seed dispersal methods can impact the survival and spread of a plant species.
   (3 marks)

Answer Key

Part A: Multiple Choice Questions

1. c) Sepals
2. c) Anther
3. c) Attract pollinators
4. c) Pumpkin
5. b) Self-pollination
6. b) Capture pollen
7. d) Rocks
8. b) Fertilization
9. c) Ovary
10. b) Pine

11. c) Develop into a seed

12. a) Ovule

13. a) Bright colors

14. b) Aggregate fruit

15. c) Style

16. b) Cross-pollination

17. a) Stigma

18. c) Fertilization

19. a) Large, colorful petals

20. a) Increased attraction of pollinators

Part B: Short Answer Questions

1. The androecium is the male reproductive part of a flower, consisting of stamens. Each stamen has two parts: the filament (a stalk) and the anther (where pollen grains are produced).
2. After pollination, pollen grains on the stigma germinate and form pollen tubes that grow down the style. The male gametes travel through these tubes to the ovule in the ovary, where fertilization occurs, leading to the formation of a zygote, which then develops into a seed.
3. Flowers may have bright colors, fragrant scents, nectar, and specific shapes or sizes to attract particular pollinators.
4. Wind pollination involves small, inconspicuous flowers that produce large amounts of lightweight pollen, while insect pollination involves colorful, fragrant flowers with nectar that produce smaller amounts of sticky pollen.
5. Cross-pollination mixes genetic material from different plants, enhancing genetic diversity and adaptability.

6. After fertilization, the primary function of the flower has been achieved. Petals, androecium, and other parts wither and fall off as they are no longer needed, allowing the plant to focus energy on developing the fruit and seeds.

Part C: Application Level Questions

1. Brightly colored flowers attract insect pollinators, increasing pollination success and resulting in higher seed and fruit production.
2. If the stigma were not sticky, pollen would not adhere effectively, reducing pollination and fertilization rates.
3. The farmer can plant different apple varieties close together, introduce pollinators like bees, and use artificial pollination methods.
4. Reduced water availability can limit seed dispersal, decreasing plant distribution and survival.
5. Effective seed dispersal methods help plants spread to new locations, reducing competition and increasing the chances of finding suitable growth habitats, enhancing survival and reproduction