PM SHRI KENDRIYA VIDYALAYA GREATER NOIDA

HOLIDAY HOME WORK BASED ON DIFFEREENT COMPETENCY BASED ASSESSMENT ITEMS

CLASS –XII SUBJECT –BIOLOGY (2025-26)

LESSON- SEXUAL REPRODUCTION IN FLOWERING PLANTS

Knowledge and Understanding (Recall & Explain)

1. Define pollination.
2. Name the male reproductive part of a flower.
3. State the function of the ovary in a flower.
4. List the types of pollination.
5. Describe the structure of a typical stamen.
6. Explain the term "double fertilization."
7. What is the role of pollen tube in fertilization?
8. Identify the parts of a carpel.
9. Distinguish between self-pollination and cross-pollination.
10. What is the role of the stigma in reproduction?

Application-Based Questions

11. Given a diagram of a flower, label the reproductive parts.
12. Predict what would happen if a flower's anthers were removed.
13. Suggest why brightly colored petals are common in insect-pollinated flowers.
14. If a plant is wind-pollinated, what floral adaptations would you expect?
15. Apply your understanding to explain why seedless fruits are produced in some plants.
16. A plant species depends on bees for pollination. What might happen if bee populations decline?
17. How can artificial pollination be useful in agriculture?
18. Use your knowledge of plant reproduction to suggest a method of producing hybrid seeds.
19. Identify the reason why some flowers produce nectar.
20. Apply knowledge of pollen germination to explain how fertilizers might affect reproduction.

Analytical Thinking

21. Compare the process of pollination in wind vs. insect-pollinated flowers.
22. Analyze the advantages and disadvantages of self-pollination.
23. Why is cross-pollination considered to promote genetic diversity?
24. Differentiate between the structures of monocot and dicot flowers.
25. Analyze the importance of synchrony in pollen release and stigma receptivity.
26. Examine the role of synergids during fertilization.
27. Why might a plant evolve mechanisms to avoid self-pollination?
28. Identify potential reasons for failure in fertilization.
29. Interpret the evolutionary significance of double fertilization in angiosperms.
30. Compare the reproductive structures of gymnosperms and angiosperms.

Higher-Order Thinking (Evaluation & Creation)

31. Evaluate the efficiency of artificial pollination in comparison to natural pollination.
32. Design an experiment to test the effect of wind on pollination rate.
33. Justify the use of biotechnology in improving plant reproduction.
34. Propose a breeding technique to improve flower yield in a specific crop.
35. Construct a model showing the journey of pollen to the ovule.
36. Develop a flowchart of the steps involved in sexual reproduction in flowering plants.
37. Assess the impact of environmental pollution on plant reproduction.
38. Debate the ethical aspects of genetically modifying flowering plants for reproduction.
39. Compose a poem or story describing the life cycle of a flowering plant.

40. Invent a device to aid pollination in a greenhouse setup.

Competency-Linked Situational Items

41. Your school garden has mango and papaya trees. Identify which is likely to be unisexual and why.
42. A plant has sticky pollen and large colorful petals. Suggest its likely pollinator.
43. You observe a flower with both reproductive parts but still relies on cross-pollination. Explain why.
44. While dissecting a flower, you see a large, sticky stigma. What does this indicate about the mode of pollination?
45. Seeds are not forming on a hibiscus plant. Suggest reasons and remedies.
46. A botanist wants to produce a hybrid plant. Which part should be removed and why?
47. Why are seed banks important in conserving plant biodiversity?
48. In a lab setup, a pollen tube doesn't reach the ovule. What factors could be responsible?
49. A fruit has no seeds. What type of reproduction might have taken place?
50. Draw Transverse section of Young anther with all layers, Mature pollen grain, Typical ovule, Mature embryo sac, Pistill showing path of pollen tube growth, Typical Dicot and Monoct embryo, structure of Castor seed and Maize grain?

LESSON – HUMAN REPRODUCTION

Knowledge-Based (Recall)

1. Define fertilization.
2. Name the primary male and female reproductive organs.
3. What is the function of the uterus?
4. Identify the hormone responsible for ovulation.
5. Label the parts of the male reproductive system.
6. List the stages of the menstrual cycle.
7. What is the role of the placenta?
8. State the site of sperm production.
9. Mention two secondary sexual characteristics in males.
10. Which structure in females receives the fertilized egg?

Understanding-Based

11. Explain how the menstrual cycle is regulated by hormones.
12. Describe the process of implantation.
13. Differentiate between identical and fraternal twins.
14. Describe the function of the fallopian tube.
15. Why is the scrotum located outside the body?
16. How does puberty affect males and females differently?
17. Explain the importance of amniotic fluid.
18. Describe the changes in hormone levels during pregnancy.
19. Interpret the role of FSH and LH in reproduction.
20. Why does menstruation occur?

Application-Based

21. Predict the outcome if the fallopian tubes are blocked.
22. Suggest ways to maintain reproductive health.
23. A woman has irregular periods; what might be the causes?
24. Explain how birth control pills prevent pregnancy.
25. Use a diagram to trace the path of sperm from formation to ejaculation.
26. Apply knowledge of fertilization to explain how IVF works.
27. How would an imbalance in estrogen affect the menstrual cycle?
28. Explain how understanding of human reproduction helps in family planning.
29. Apply the stages of labor to identify the correct birth phase in a scenario.
30. Analyze a hormonal chart to identify when ovulation occurs.

Analysis-Based

31. Compare and contrast sexual and asexual reproduction.
32. Analyze the menstrual cycle to determine the fertile period.
33. Evaluate how lifestyle affects reproductive health.
34. Distinguish between ovulation and menstruation using a flowchart.
35. Examine the effects of reproductive diseases like STIs.
36. Compare human reproductive strategies with those of mammals.
37. Why do reproductive technologies raise ethical issues?
38. Analyze the roles of progesterone and estrogen during pregnancy.
39. How does the structure of sperm aid in fertilization?
40. Interpret a graph showing hormone levels across the menstrual cycle.

Evaluation & Higher Order Thinking

41. Assess the impact of early pregnancy on teenage health.
42. Evaluate pros and cons of various contraceptive methods.
43. Formulate a campaign to educate peers on reproductive health.
44. Justify the need for sex education in schools.
45. Develop a plan to promote awareness of STDs in your community.
46. Debate: Should IVF be made freely available to all?
47. Critique the portrayal of human reproduction in media.
48. Propose improvements in reproductive healthcare access.
49. Defend the role of hormones in maintaining pregnancy.
50. Draw Diagrammatic representation of Spermatogenesis and Oogenesis, Sectional view of somniferous tubules(enlarged),Sectional view of ovary, Diagrammatic representation of various events during menstrual cycle,

CHAPTER3:- REPRODUCTIVE HEALTH

1.Our government has intentionally imposed strict conditions for MTP in our country. Justify
giving a reason.
2. Name an IUD that you would recommend to promote the cervix hostility to sperms.
3. State one reason, why breastfeeding the baby acts as a natural contraceptive for the mother.
4. Mention one positive and one negative application of amniocentesis
5. What do oral pills contain and how do they act as effective contraceptives?
6. Why is Cu-T considered a good contraceptive device to space children?
7. Describe the lactational amenorrhea method of birth control.
8. After a brief medical examination a healthy couple came to know that both of them are unable to produce functional gametes and should look for an ‘ART’ (Assisted Reproductive Technique). Name the ‘ART’ and the procedure involved that you can suggest to them to help them bear a child
9. An infertile couple is advised to adopt test tube baby programme. Describe two principal procedures adopted for such technologies.
10. A childless couple has agreed for a test tube baby programme. List only the basic steps the procedure would involve to conceive the baby.

- **COMPLETE YOUR INVESTIGATORY PROJECT ON GIVEN TOPIC.**