HOLIDAYS HOME WORK - BIOLOGY

SESSION – 2026 - 27 **CLASS -XII**

General instructions:

1. **Learn chapters 1 to 3 for class test.**
2. **Complete your investigatory projects as discussed in the class.**
3. **Complete your practical files.**
4. **Do following assignments from chapter 1 to 4 in your Assignment registers.**

CHAPTER WISE CASE BASED QUESTIONS

Chapter 1 - Sexual Reproduction in flowering plants

Q1. One of the post fertilization events is formation of seed that is final product of sexual reproduction in plants. They may be albuminous or non albuminous. Now answer the following questions

(a) Give two examples of non albuminous seeds that have no residual endosperm.
(b) Write two examples of albuminous seeds that have perisperm.
(c) Draw the vs. of maize grain.

Q2. Seeds are products of fertilization. They are known as fertilized ovules. In the plants diploid egg cell develops without the act of fertilization. Keeping this view , explain :-

(a) Define apomixes
(b) Name some apomictic seeds.
(c) How are apomictic seeds formed in some flowering plants?

Q3. Nowadays the human population is rapidly increasing. To meet the nutritional requirements of people farmers are cultivating hybrid varieties of a food and vegetable crops. Explain

(a) One problem of hybrids
(b) What is the importance of apomixes in seed industry.

Chapter 2 - Human reproduction

Q1. There is a fashion nowadays in the world that nursing mothers do not breast feed their young ones or infants that are newly born to maintain their body. The breasts feeding are recommended by doctors to bring up healthy baby.

(a) In the above situation define the colostrum.
(b) Why is colostrum necessary in the new born babies during initial months of growth.

Q2. Various hormones are released during pregnancy in human females by the placenta . ovary also secretes relaxin hormone. The child birth is induced by the cortisol and oxytoin hormones. In brief describe:

(a) The role of oxytocin during child birth
(b) What leads to parturition

Chapter 3 - Reproductive health

Q1. There are a large number of couples in India that they are unable to produce children . we blame the female for it. This problem may be in the male. Now a days such couple can be assisted to have children by some ARTs.

(a) In this situation suggest the possible measures to have children.
(b) explain any three of them in detail to help such couples.

Q2. The human population growth is increasing day by day at an alarming rate lead to scarcity of food, shelter and clothing in future. The government has asked people to take up measures to check the growth rate. A wide Vareity of contraceptives by people.

(a) What are various categories of contraceptives ? Explain in brief?
(b) Can there be a terminal method to prevent more pregnancies ? Discuss?

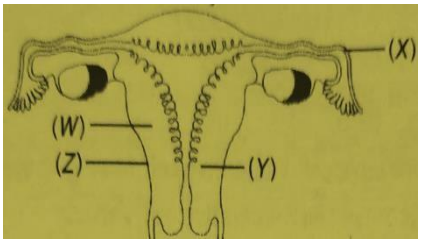
Q3. Some diseases are transmitted through sexual intercourse. One of these is most dengrous diseases or infection in humans. Some of them are curable but one is not curable.

(a) Name the diseases and its symptoms
(b) List any three control measures of this disease.

UNIT I COMPETANCY BASED QUESTIONS

1. On the basis of the given diagram arrange the following in the proper labeling-

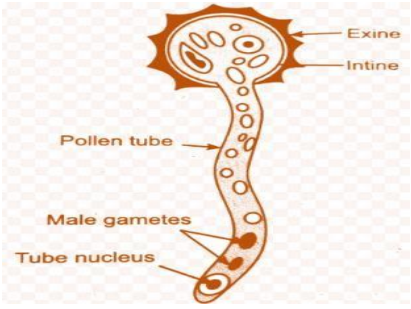
W	X	Y	Z
Ampulla	Endometrium	Perimetrium	Cervix



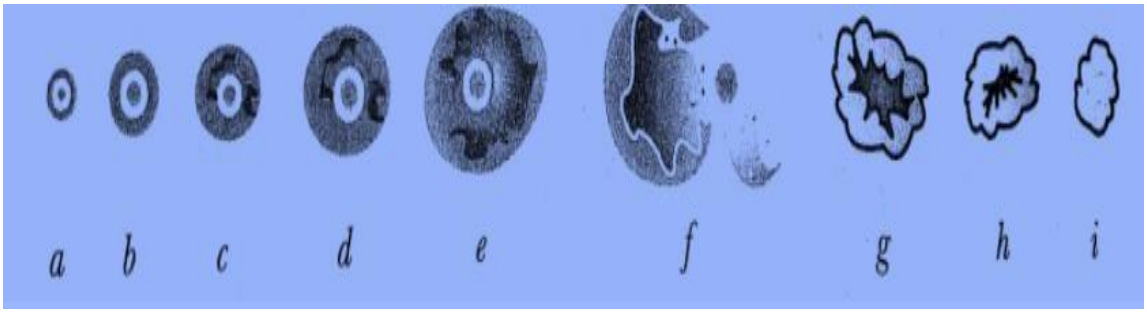
2. Observe the diagram and label "A" and "B" as well as write two specific features of "B

3. Once Varsha and Payal visit a crop field of maize. There at some places, they saw thatsome of the flowers were covered with polybags and tied. Explain the specific purposeof such an arrangement in a maize field.

4. The outer layer of the pollen grain is exine. The exine is made up of sporopollenin, oneof the most resistant organic substances. It helps the pollen grains resist high temperatures, strong acids, and alkalis and also protects them from enzyme degradation.In spite of exine, we can see pollen tubes emerging from the outer layer of the pollen grain. Does it happen?



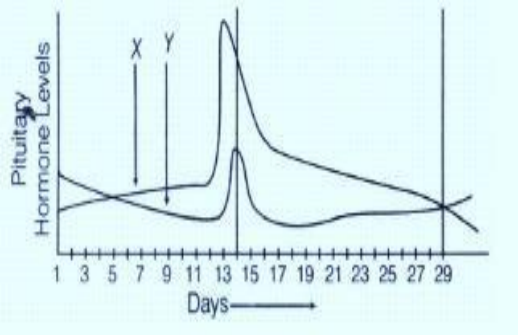
5. The following is the sequence of ovarian events in the human female-



i) Which hormone is responsible for development from q to e?

ii-Identify the role of g and mention its role.

6. Study the graph carefully and write the answers of the given questions-



i) Name the hormones 'X' and 'Y'.

ii) What does the maximum peak depict?

Assignment based on Chapter 4-Principles of inheritance and variation

1. Define the following terms:

(i) Inheritance (iii) Alleles (v) Homozygous condition

(ii) Variation (iv) Genes (vi) Heterozygous condition

2. Write a short note on Mendel's contribution in genetics.

3. What is dominant and recessive factor?

4. State the law of dominance with the help of an example.

5. What are chromosomal disorders?

6. How is polyploid cell obtained?

7. What is aneuploidy?

8. Explain the following chromosomal disorders giving an account of abnormality found in individuals: -

(i) Down's syndrome

(ii) Klinefelter's syndrome

(iii) Turner's syndrome

9. What is hemophilia?

10. What are the sources of variation?

11. What are point mutations and frameshift mutations?

12. What are mutagens? Give examples.

13. Give an example of female heterogeneity.

14. What is henking's X-body?

15. Give the mechanism of sex determination in grasshopper.

16. What is the contribution of Alfred strutevant?

17. Explain the mechanism of sex determination in case of Drosophila.

18. While carrying out certain crosses Morgan found that proportion of parental gene combinations was much higher than non-parental types. What could be the possible cause of this observation? What is this phenomenon called as?

19. State and explain the chromosomal theory of inheritance.

20. Explain the principal of independent assortment with the help of dihybrid cross.

21. Explain the following with the help of examples:

(i) Co dominance

(ii) Multiple alleles
(iii) Incomplete dominance

Problems in genetics

22. In cattle hornless (H) is dominant over horned (h), and black (B) is dominant over red (b). Consider that these two pairs of genes assort independently (i) what proportion of spring from the cross BbHh X bbhh in would be black hornless.

(iii) From the cross Bbhh X Bbhh, how many will be black and horned, red and horned, red and hornless

23. In guinea pigs assume that rough coat (S) is dominant over smooth coat (s) and the black (W) is dominant over white (w). Can the mating between two rough, black guinea pigs produce offspring which are rough white and smooth black?

24. How many different gametes could result from the following genotypes? In each case what will be their genotypes?
(i)Aa (ii) AABB (iii)AaBb
(iv)DD Ee Cc (v)FF II Jj

25. In a cross between tall pea plant with yellow seeds (DdYy) and tall a plant with green seeds (Ddyy), what proportion of the offsprings could be expected to be (i) Tall green (ii) dwarf and green?

26. A couple got five sons and a daughter. The husband thinks that he produces more Y bearing sperms. Give your views.

27. In human beings blue eye colour is recessive to brown eye colour. A brown eyed man has blue eyed mother.
(i) What is the genotype and his mother?
(ii) What all the possible genotypes of his father?
(iii) If the man marries a blue eyed woman. What are possible genotypes of their offsprings.

28. A man with AB blood group has married a woman with O group. Show the possible genotypes and phenotypes of the progeny.

29. A man with A type blood group has a wife with type B. They have a child with O blood. Give the genotypes of all the three. What other blood groups can be expected in the future offspring of this couple?

30. A black colored cock when bred with white-colored hen produced steel blue colored offspring called andulasian (chicken) when the steel blue colored progeny were obtained.

(i) this result is genetically explained as _____.

(ii) What will the expected ratio of black, steel blue and white progeny?

31. In dogs the barking trait is dominant over the silent-trait and erect ears are dominant over drooping ears. What is the expected phenotypic ratio of the offspring when dogs heterozygous for both the traits are crossed?

32. A man brown eyes (B) are dominant to blue (b) and dark hair (R) dominant to red hair (r). A man white brown eyes and red hair, whose father was blue eyed marries a women with blue eyes and hair but whose mother was red haired. They have four children. Give the phenotype and genotype of parents and children.

33. In garden pee smooth seeded (S) character is dominant over wrinkled seeded (s) character and red flower ® over white ® flowers. Determine the genotype and phenotype of the following crosses.

(i) Ss rr X Ss RR
(ii) SsRr X Ss rr
(iii) Ss Rr X ss rr
(iv) SSRR X SS RR
(v) Ss Rr X Ss Rr

34. Give two main reasons for Mendel's success.

35. Why was phenotype and genotype ratio same in f_2 in Antirrhinum sp. ?

36. Why was Morgan and his workers getting higher proportion of parental gene combinations than non-parental in Drosophila Melanogaster?
What is the combination of Sex chromosomes in a) Hen
b) Cock

37. "Valine substitutes glutatmic acid at the sixth position of the beta globin chain of the haemoglobin molecule." What chromosomal disorder is being ta lked about?
38. What allelic combinations are possible for blood group A.
39. What is the importance of pedigree analysis in case of humans?
40. How many Henking's X Bodies can be seen in a person suffering from Turner 's syndrome?
41. Give an example of male heterogeneity?
42. Give two points of comparison between behaviour of chromosomes and genes?