



HOLIDAYS' HOME WORK
SESSION – 2019-2020
CLASS -XII (BIOLOGY)

General instructions:

- I Learn chapters 1 to 5 .**
 - II Select a project for your annual board practical exam carrying 5 marks and collect all relevant information on it. Refer to your lab manual for ideas.**
 - III Complete your practical files.**

 - IV Do following assignment in your Assignment registers.**
- 1. Name the vegetative propagules in (i) Potato and (ii) Pistia.**
 - 2. Mention the combination (s) of sex chromosomes in a male and a female bird.**
 - 3. Mention the relationship between concentration of luteinizing hormone and maintenance of endometrium in the human uterus.**
 - 4. Explain codominance with the help of one example.**
 - 5. Apomixes resembles asexual reproduction, as well as mimics sexual reproduction in plants. Explain with the help of a suitable example.**
 - 6. Describe the embryonic development of a zygote up to its implantation in humans.**
 - 7. Explain the cause of chromosomal disorders in humans. Describe the effect of such disorders with the help of an example each involving (i) autosomes, and (ii) sex chromosomes.**
 - 8. Describe the experiments that established the identity of transforming principles of Griffith.**
 - 9. What are the benefits of choosing a dioecious plant species for plant breeding experiments?**
 - a. How would you proceed to cross- pollinate a monoecious flower?**
 - b. Draw a labeled schematic diagram of T.S. of an anther of an angiosperm.**
 - 10. Define the following terms:**
 - (i) Inheritance (iii) Alleles (v) Homozygous condition (vii) Dominant allele**
 - (ii) Variation (iv) Genes (vi) Heterozygous condition (viii) Recessive allele**
 - 11. What are chromosomal disorders?**
 - 12. How is polyploid cell obtained?**
 - 13. What is aneuploidy?**
 - 14. 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**
 - 15. What are point mutations and frame shift mutations?**
 - 16. What are mutagens? Give examples.**
 - 17. Give an example of female heterogamety.**
 - 18. What is Henking's X-body?**
 - 19. What was the contribution of Alfred Sturtevant?**
 - 20. 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?**
 - 21. State and explain the chromosomal theory of inheritance.**

22. Explain the principal of independent assortment with the help of dihybrid cross.
23. Explain the following with the help of examples:
- (i) Co dominance
 - (ii) Multiple alleles
 - (iii) Incomplete dominance

Problems in genetics

24. 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

25. 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?

26. 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

27. 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

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

29. 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.

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

31. 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?

32. A black colored cock when bred with white-colored hen produced steel blue colored offspring called Andalusian (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?

33. 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?

34. A man with 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.

35. 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

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

37. Why was phenotype and genotype ratio same in f₂ in Antirrhinum sp. ?

38. Why was Morgan and his workers getting higher proportion of parental gene combinations than non-parental in Drosophila melanogaster.

39. "Valine substitutes glutamic acid at the sixth position of the beta globin chain of the hemoglobin molecule." What chromosomal disorder is being talked about. Explain.

40. How many Henking's X Bodies can be seen in a person suffering from Turner 's syndrome?