N. C Jindal Public School
Assignment- Half Yearly
Biology
Class XII

1. When did flowering occurs last time in *Strobilanthus Kunthiana*? 1
2. Name the part of flower that contributes to fruit formation in strawberry and Guava respectively 1
3. How is polyspermy prevented in humans? 1
4. Offsprings formed due to sexual reproduction have better chances of survival. Why? 1
5. Name developmental stage in humans which gets implanted in uterine wall. 1
6. Name the type of evolution that has brought the similarity as seen in potato tuber and sweet potato. 1
7. What do you understand by 'degeneracy' of the genetic code? 1
8. Name the molecule synthesized by 'i' gene in lac operon. How does this molecule get inactivated? 1
9. Give reasons
   i. Pollen grains are well preserved fossils.
   ii. Cells of tapetum have dense cytoplasm. **1**
10. What are the major components of seminal plasma? **1**
    How MRI is useful in diagnosis of cancer? **1**
11. Identify the following: **1**
    i. 5'-GAATTC-3'
       3'-CTTAAG-5'
    ii. 5'G AATTC-3'
       3'-CTTAA G-5'
12. Baculoviruses are excellent candidates for integrated pest management in an ecologically sensitive area. Why? **1**
13. The turkey usually produces females for several generations. How is this possible? 1

14. Name two plants which show unusual flowering phenomenon? 1

15. Pistil of a flower does not accept pollen from any plant other than from its own kind. How does it happen? 1

16. Mention the fate of innercell mass and trophoblast after implantation in uterus. 1

17. What causes infertility in women? **1**

18. What is the significance of studying recombination frequency (in percent)? **1**

19. Mention two additional processings which hnRNA needs to undergo along with splicing so as to become functional. **1**

20. Give one function of histone protein and nonhistone chromosomal protein in a eukaryotic nucleus. **1**

21. How many different gametes could result from the following genotypes (i) AaBb (ii) DDEeCc **1**

22. Age group of 15-24 years is highly vulnerable to sexually transmitted diseases. What preventive measures should be taken? **2**

23. What are chasmogamous flowers? Can cross pollination occur in cleistogamous flowers? Give reasons. Name a plant in which chasogamous and cleistogamous both types of flowers are found. **2**

OR

Placenta acts as endocrine tissue. Justify.

24. Trace the development of zygote upto its implantation in the uterus. **2**

25. Complete the following table: **2**

S.No	Disease	Causative	Symptoms
i.	Ascariasis	a	Internal bleeding and muscular pain
ii.	b	c	Inflammation and severe swelling in one of lower limbs
iii.	Amoebiasis	d	e
iv.	f	Microsporum	g

26. What do you mean by semiconservative mode of DNA replication? **2**

27. (i) Why meristem culture is one of the best techniques of tissue culture?
(ii) How resistance of yellow mosaic virus in Bhindi has been incorporated? **2**

28. Name the organism from which Ti plasmid is isolated. Explain the use of this plasmid in biotechnology. **2**

29. How seasonal breeders are different from continuous breeders? 2

30. Describe the hormonal regulation of spermatogenesis in males. 2

31. How do the oral pills help in birth control? Name the common pills used in India.**2**

32. When a cross is made between tall plant with yellow seeds(TtYy) and tall plants with green seed(Ttyy), what proportions of phenotype in offspring could be expected to be (a) Tall and green (b) Dwarf and green **2**

33. Draw lac operon. How does lac operon get switched on? **2**

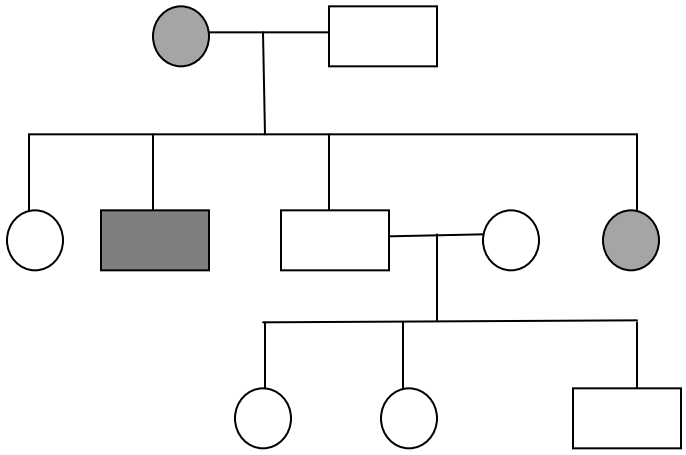
34. Define the term syngamy? Write the product of this event. Where does this event occur in Amphibians and Reptiles? 2

35. Write the name of vegetative propagules found in the following angiosperms
. (i) Water hyacinth (ii) Bryophyllum (iii) Agave (iv) Ginger 2

36. Distinguish between homogamete and heterogamete. Give one example of each.
2

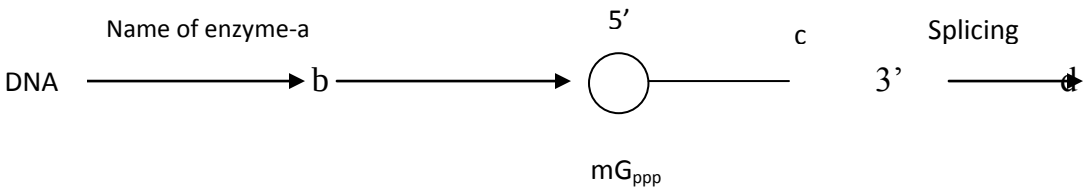
37. Darwin observed a variety of beaks in small birds inhabiting Galapagos islands. Explain what conclusions did he draw and how? 2

38. In the following pedigree chart, state if the trait is autosomal dominant, autosomal recessive or sex linked. Give reasons for your answer. 2



39. How is Darwin's concept of evolution different from the de Vries? 2

40. Given below is a sequence of steps of transcription in a eukaryotic cell. Fill up the blanks (a,b,c,d) left in the sequence. 2



41. Why is the process of fertilization in a flowering plant referred to as double fertilization? Explain. 3

42. Draw a neat diagram of sperm of human male and label the following.
(i) Acrosome (ii) Mitochondria (iii) Nucleus (iv) Neck (v) Tail (vi) Middle piece 3

43. (a) Name the pituitary hormones influencing leydig cells and Sertoli cells present in human testis. Explain the functions of these cells. 2

(b) What is meant by LH surge? Write the role of LH? 1

44. (a) Explain with the help of a diagram the development of a mature embryo sac from megaspore mother cell in angiosperm.

(b) Explain the mechanism followed by a plant breeder during emasculation and bagging. 3+2

45. Inheritance pattern of flower colour in garden pea plant and snapdragon differs. Why is this difference observed? Show both the crosses upto F_2 generation. 3

46. (a) Briefly describe Oparin- Haldane hypothesis.

(b) What is genetic drift? 3

47. (a) How does a haemophillic patient suffer?

(b) A haemophillic son is born to a 'normal couple'. Explain the mechanism of this inheritance. What is the probability of a haemophillic daughter born to this couple? 3

48. (a) Explain the experiment performed by Griffith on *Streptococcus pneumonia*. What did he conclude from this experiment?

(b) Why both strands of DNA are not copied during transcription? (3+2)

49. (a) How do cells divide during gamete formation?

(b) Why offsprings of oviparous animals are at a greater risk for survival? 3

50. Trace the events that occur in a functional megaspore leading to the development of a mature embryo sac in an angiosperm. 3

51. (a) Draw a schematic diagram of T.S of mature anther. Label only the layers that help in dehiscence of the anther to release pollen grains. 2

(b) If you squeeze a seed of orange, you might observe many embryos of different sizes. How is it possible? 1

52. Draw schematic diagram of process of oogenesis. When and where in the body oogenesis completed? 3

53. (a) Why has amniocentesis been banned for sex determination in our country?

(b) How do IUD's act as contraceptives? **3**

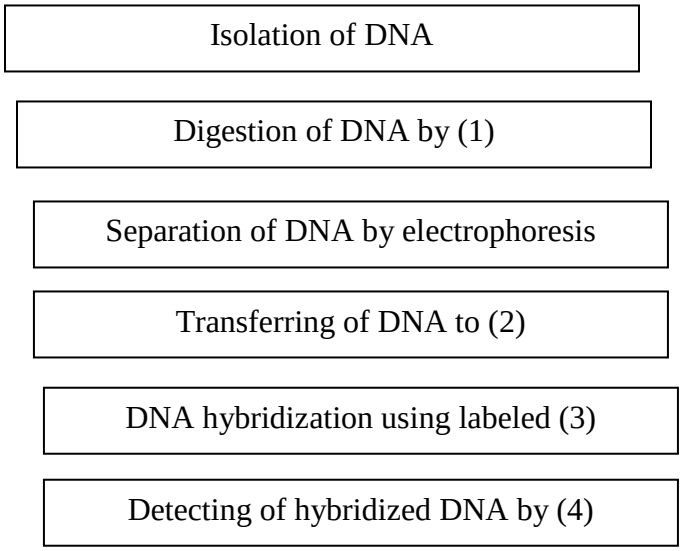
54. What is the cytological basis of Down's syndrome? Give physical symptoms of this order. Explain why the children born to younger women seldom show this abnormality. **3**

55. How did Hershey and Chase prove that DNA is the hereditary material? Explain their experiment with suitable diagrams. **3**

56. Draw a labeled diagram of L.S. of a flower to show the growth of pollen tube reaching egg apparatus. **3**

57. Explain with the help of the diagram the development of oocyte into Graafian follicle. 3

58. Complete the following flow chart **3**



(a) Complete 1,2,3,4

(b) Name the technology of the above flowchart. The above technique cannot be used only in one situation. Name the situation.

59. What are the steps for breeding for disease resistance? Name a fungal and viral disease in plants. **3**

60. Explain the mode of action of following: **3**

i. Opiods
ii. Cannabinoids
iii. Cocaine

61. . Explain the construction of a biogas plant along with well labeled diagram. **3**

62. Mendel's work remains hidden for quite a long time. Why? **(2)**

63. (a) Draw a labelled diagram of lac operon and answer the following questions

(i) How does the repressor molecule get inactivated?

(ii) When does the transcription of lac mRNA stop?

(iii) Name the enzyme transcripted by the gene 'z'.

(3)

64. (a) Write the methodology of Human Genome sequencing.

(b) Darwin observed a variety of beaks in small black birds inhabiting Galapagos islands. Explain what conclusions he draw and how. **(3+2)**