



# Anand Niketan

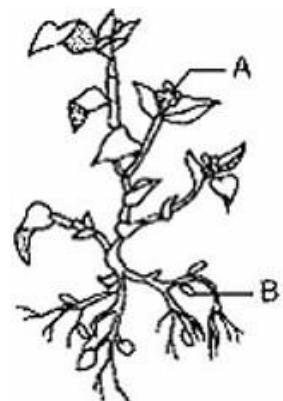
## Maninagar Campus

Grade : XII

Subject : Biology

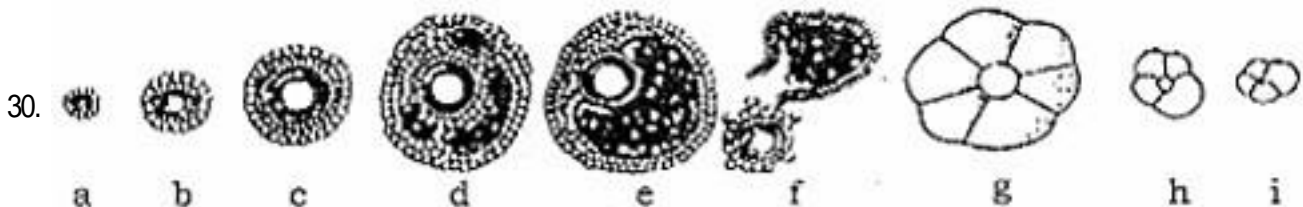
WORKSHEET Emp 1

1. Higher organisms have resorted to sexual reproduction in spite of its complexity. Why?
2. Name an organism where cell division is itself a mode of reproduction.
3. State the difference between meicyote and gamete with respect to chromosome number.
4. What is vegetative propagation? Give two suitable examples.
5. What is a bisexual flower?
6. Coconut plant is monoecious while date palm is dioecious. Why are they called so?
7. Examine a few flowers of any cucurbit plant and try to identify the staminate and pistillate flowers.  
Do you know any other plant that bears unisexual flowers?
8. Define external fertilization. Mention its disadvantages.
9. What are gemmules? Name the organism which produces gemmules. Make a labeled diagram of gemmule.
10. Difference between a Zoospore and a zygote.
11. What is bagging technique? How is it useful in a plant breeding programme?
12. How do the pollen grains of Vallisneria protect themselves?
13. Even though each pollen grain has two male gametes, why are at least 10 pollen grains and not 5 pollen grains required to fertilize 10 ovules present in a particular carpel?
14. A bilobed, dithecous anther has 100 microspore mother cells per microsporangium. How many male gametophytes this anther can produce?
15. What is self-incompatibility? Why does self-pollination not lead to seed formation in self-incompatible species?
16. Identify the types of flower shown in A and B. Which out of the two will produce an assured seed set.
17. Draw a longitudinal section of a post-pollinated pistil showing entry of pollen tube into a mature embryo sac. Label filiform apparatus, chalazal end, hilum, antipodals, male gametes and secondary nucleus.
18. With a neat, labeled diagram, describe the parts of a typical angiosperm ovule.
19. Draw a diagram of an enlarged view of T.S. of one microsporangium of an angiosperm and label the following parts:
  - Tapetum
  - Middle layer



- Endothecium
- Microspore mother cell

20. Draw a diagram of male gametophyte of an angiosperm. Label any four parts. Why is sporopollenin considered the most resistant organic material?
21. Menstrual cycle ceases during pregnancy. (True/False)
22. At what stage of life oogenesis is initiated in a human female? When does the oocyte complete oogenesis?
23. The human testes are located outside the abdominal cavity. (give reason)
24. What is corpus luteum? Under what conditions does it undergo degeneration?
25. Name the sperm lysine, which organelle secretes it? What is its function?
26. Define the terms:
- Teratogens
  - Phocomelia
27. Write the function of each of the following:
- Seminal vesicle
  - Acrosome of human sperm
  - Fimbriae
28. What structure forms the corpus luteum and at what stage? Name two hormones secreted by it.
29. What is spermatogenesis? Briefly describe the process of spermatogenesis.

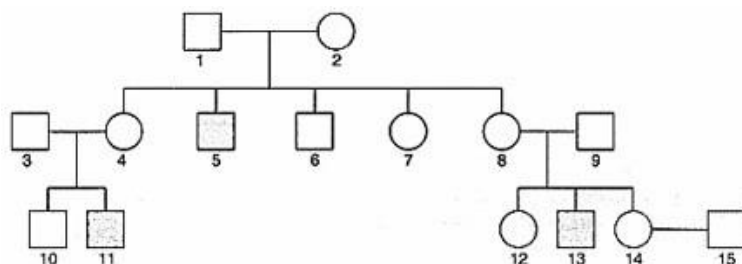


- Identify the figure that illustrates corpus luteum and name the pituitary hormone that influences its formation.
  - Specify the endocrine function of corpus luteum. How does it influence the uterus? Why is it essential?
  - What is the difference between 'd' and 'e'?
  - Draw a neat labeled sketch of Graafian follicle.
31. Correct the following statements: Are all sexually transmitted diseases completely curable ?
32. List various natural methods of birth control.
33. Correct the following statement: Surgical methods of contraception prevent gamete formation?
34. Write the full form of the following: MMR, IVF, GIFT, ART.
35. Is the use of contraceptives justified? Give reasons.
36. What are the suggested reasons for population explosion?

37. What is the advantage of Saheli? Who prepared Saheli?
38. Describe the three manners in which fertilization of human ovum by a sperm can be prevented.
39. Fed up of a large family, a couple wanted to adopt a terminal method of contraception. Describe the process conducted by the doctor in either of the cases (male / female partner).
40. What do you understand by the term population explosion? What are the reason for population explosion?
41. The phenotypic and genotypic ratios in  $F_2$  generation are same in a certain kind of inheritance. Name and organism in which it occurs and mention the kind of inheritance involved.
42. Define multiple allelism.
43. Write two uses of chlorine?
44. Write the sex chromosomal complement of the following:

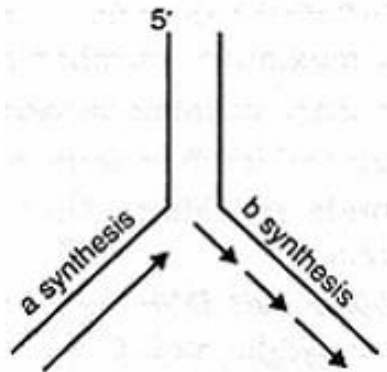
	<b>Animal</b>	<b>Sex Chromosomes</b>
i	Drosophila ♂	a
ii	Grasshopper ♂	b
iii	Fowl ♀	c
iv	Homo Sapiens ♀	d

45. Name the respective pattern of inheritance where  $F_1$  phenotype:
- does not resemble either of the two parents and is in between the two
  - Resembles only one of the two parents.
46. Briefly mention the contribution of T.H. Morgan in genetics.
47. Mention any two autosomal genetic disorders with their symptoms.
48. Describe the situations in which independent assortment of genes results in 50% recombination.
49. How is a child affected if it has grown from the zygote formed by an XX-egg fertilized by a Y-carrying sperm? What do you call this abnormality?
50. Haemophilia is a sex linked recessive disorder of humans. The pedigree chart given below shows the inheritance of haemophilia in one family. Study the pattern of inheritance and answer the questions given.

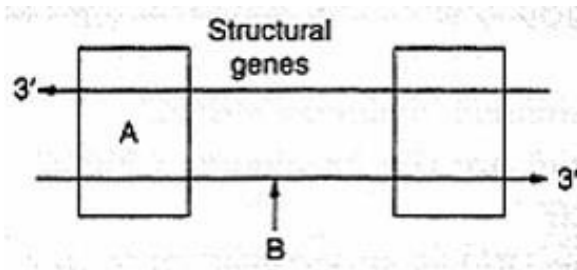


- Give all the possible genotype of the members 4, 5 and 6 in the pedigree chart.
- A blood test shows that the individual 14 is a carrier of haemophilia. The member numbered 15 has recently married the member numbered 14. What is the probability that their first child will be a haemophilic male?

51. Name the types of synthesis 'a' and 'b' occurring in the replicating fork of DNA as shown below:



52. Name the parts 'A' and 'B' of the transcription unit given below:



53. Mention the two additional processing which hnRNA need to undergo after splicing so as to become functional.

54. Name the chromosome that has

- the maximum / most number of genes
- the least number of genes

55. The backbone of DNA strands contains atoms joined by covalent bonds, whereas the bases between the two strands are hydrogen bonded. Based upon your knowledge of bonds, what is the significance of the type of bonding existing in a DNA molecule.

56. What is teminism?

57. Mention any four applications of DNA fingerprinting?

58. Write the full form of VNTR? How is the VNTR different from 'probe'?

59. What are satellite DNA in a genome? Explain their role in DNA fingerprinting.

60. Describe Frederick Griffith experiment on streptococcus pneumoniae. Discuss the conclusion he arrived at.

61. Name the species in the blanks a and b given below \_\_\_\_\_ Ramapithecus a b

Homo erectus \_\_\_\_\_ Homo sapiens. → → →

62. Name the common ancestor of great apes and man?

63. What is the significance of Lederberg experiment?
64. State the significance of the study of fossils in evolution.
65. State the significance of coelacanth in evolution.
66. Define homologous organs. Give one example of an organ homologous to the hand of man.
67. What is the study of fossils called? Mention any three points how the fossils throw light on the past.
68. Explain convergent and divergent evolution with the help of one example of each.
69. State in what ways Stanley Miller stimulated the conditions of -
  - Primitive atmosphere on earth.
  - Energy source at the time of origin of life
  - Formation of organic molecules of life to prove the theory of chemical evolution.
70. State the theory of Biogenesis. How does Miller's experiment support this theory?
71. Name a test used for confirmation of typhoid.
72. What is vaccine? Give an example of a vaccine produced by recombinant DNA technology.
73. Name the type of cells that produce antibodies.
74. State two different roles of spleen in the human body.
75. List the specific symptoms of typhoid. Name its causative agent.
76. What are interferons?
77. Name the cells that act as HIV factory in humans when infected by HIV. Explain the events that occur in the infected cell.
78. Name the plant source of cocaine. How does it affect the human body?
79. Mention the name of causal organism, symptoms and the mode of transmission of the disease Amoebiasis.
80. Do you think that friends can influence one to take alcohol/drugs? If yes, how may one protect himself / herself from such an influence?