

STD XII
26 -5-14

INDIAN SCHOOL SOHAR
UNIT TEST
BIOLOGY

M.M:50
Time: 2 hrs

General Instructions:-

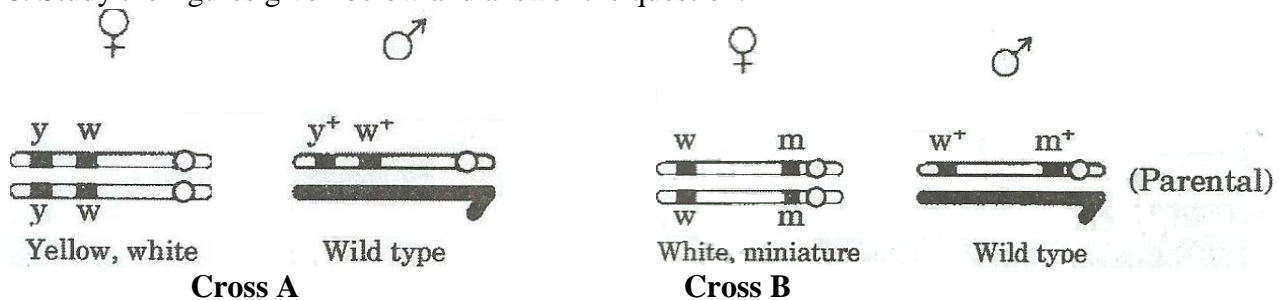
- (i) This question paper consists of four Sections **A, B, C, D**. Section **A** contains 5 questions of 1 mark each, Section **B** is of 7 questions of 2 marks each, Section **C** is of 7 questions of 3 marks each and Section **D** is of 2 questions of 5 marks each.
- (ii) All questions are compulsory.
- (iii) There is no overall choice. However, an internal choice is provided in **one** question of 2 marks, **one** question of 3 marks and **all** questions of 5 marks weightage. Attempt only one of the choices in such questions.
- (iv) Questions of Section **A** are to be answered in one word or one sentence each, Section **B** in approximately 20-30 words each, Section **C** in 30-50 words each and Section **D** in 80-120 words each.

SECTION-A

1. How are apomicts useful to farmers? (1)
2. Define Pleiotropism. (1)
3. Breast feeding recommended by doctors for bringing up a healthy baby. Justify. (1)
4. The meiocyte of an onion plant contains 32 chromosomes. Work out the number of chromosomes found in its endosperm and in the gametes. (1)
5. Cleistogamous flowers are invariably autogamous. How is it advantageous to the plant? (1)

SECTION-B

6. Some angiosperm seeds are said to be 'non-albuminous', whereas few others are said to have perisperm. Explain each with the help of an example. (2)
7. How is sex determination mechanism different in the birds? Is the sperm or the egg responsible for the sex of the child? Explain with a cross. (2)
8. Study the figures given below and answer the question. (2)



Identify in which of the crosses is the strength of linkage between the genes higher. Give reason.

OR

Human skin colour is believed to be controlled by at least three separate genes.

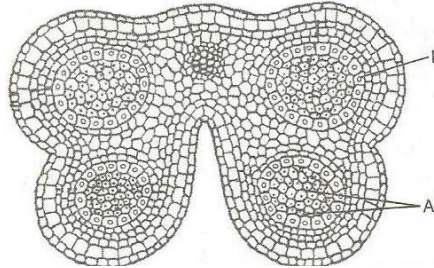
- (a) What do you call this type of inheritance?
 - (b) Suppose the genes are designated as A, B and C, and darkness is dominant over fairness. What shall be the genotype and total number of allele combinations of the darkest, fairest and intermediate skin colour?
9. Continued self-pollination results in inbreeding depression. List two outbreeding devices that plants have developed to encourage cross pollination. (2)
 10. Given below are some contraceptive methods. Classify them and write the principle involved in the use of each of the following contraceptives. (2)
 - (a) Saheli
 - (b) CuT.

11. Study the situation shown below and answer the following questions. (2)



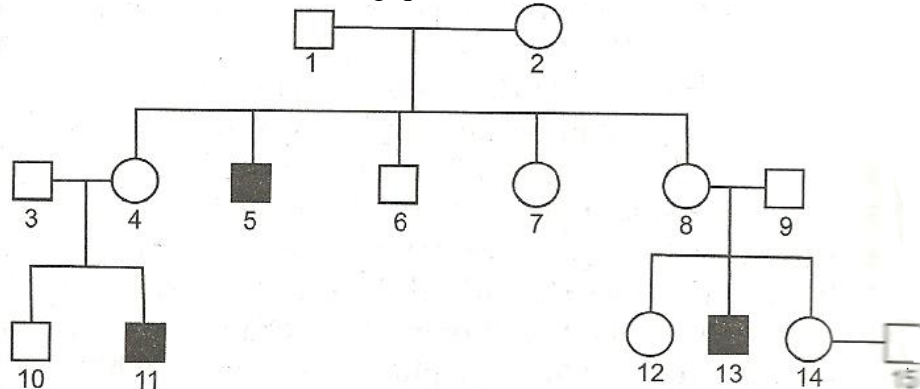
- (a) Name the abnormality caused when the sperm marked (p) fertilizes the egg marked (s) and (q) fertilizes the egg marked (r).
 (b) Mention any two abnormalities in such children.

12. Given below is the T.S Of a mature anther . Identify 'A' and 'B' and mention their function. (2)



SECTION-C

13. The pedigree chart given below shows the inheritance of haemophilia in one family. Study the pattern of inheritance and answer the following questions:- (3)



- (a) Give the possible genotypes of the members 4,5,6,7 in the pedigree.
 (b) A blood test shows that the individual 14 is the carrier of haemophilia. The member numbered 15 has recently married member numbered 14. What is the probability that their first child will be a haemophilic male.
 (c) Why is the possibility of a human female suffering from haemophilia rare? Explain.

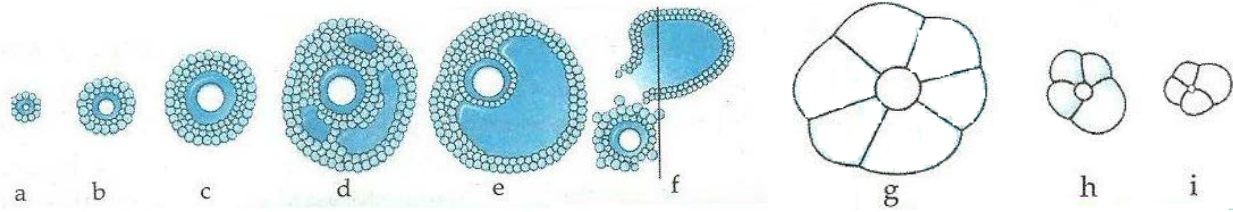
14. (a) List the post- fertilization events that takes place in a plant. (four points) (3)
 (b) Double fertilization is said to be an event unique in angiosperms. Justify.

15. Complete the table given below, using methods to assist infertile couples to have children. (3)

Technique	Procedure
a)-----	Transfer of ovum into fallopian tube.
ICSI	b) -----
IUT	c)-----

16. Represent schematically the stages of spermatogenesis. Name the hormones regulating spermatogenesis. (3)

17. The following figures (a-i) shows the sequence of ovarian events in a human female. (3)



- (a) Identify the figure that depicts ovulation and mention the phase of oogenesis that follows this.
 (b) Name the ovarian hormone and the pituitary hormone that have caused the above mentioned event.
 (c) Explain the events that occur in the uterus simultaneously in anticipation.
18. Make a diagrammatic sketch of the electronic microscopic view of a mammalian sperm. Label only those parts that assist the sperm to reach and gain entry into the female gamete along with their functions. (3)
19. According to 2001 census report, the growth rate is about 1.7% in India, a rate at which our population could double in 33 years. (3)
- a) List the two main causes of population explosion in India.
 b) Enlist the strategies that have been adopted to achieve a reproductively healthy society.
 c) Suggest two aspects of reproductive health which need to be given special attention in the present scenario.

SECTION-D

20. (a) The gynoecium represents the female reproductive part of the flower. Explain the development a typical angiosperm megasporangium into a functional female gametophyte. (5)
 (b) Why is development of female gametophyte said to be monosporic?

OR

- (a) A sperm has just fertilised a human egg in the fallopian tube. Trace the events that occur during fertilization and explain, the changes that the fertilised egg will undergo upto implantation in the uterus.
 (b) 'Placenta acts as an endocrine tissue'. Justify.
21. (a) Inheritance pattern of ABO blood group in humans shows dominance, co-dominance and multipleallelism. Explain each of these concepts with the help of blood group genotypes. (5)
 (b) A boy with blood group 'A', whose mother has blood group 'B'. Give the possible genotype and phenotype of the father.

OR

- (a) Inheritance patterns of flower colour in garden pea plant and snap dragon differ.
 (i) Account for this difference in their inheritance pattern with the help of crosses.
 (ii) How is the phenotypic ratio of F_2 generation different in the above cases?
 (b) By simply looking at the phenotype of a dominant trait, it is not possible to determine the genotype of F_2 . How can the genotype be analysed ?

***** THE END *****