INDIAN SCHOOL SOHAR

Total no.pages 3

STD XII | UNIT TEST | Time: 2hrs

22 -5-17 | BIOLOGY (THEORY) | Marks: 50

General instructions:

i) All questions are compulsory.

ii) This question paper consists of five sections A, B, C, D and E. Section A contain 5 questions of one mark each, Section B is of 5 questions of two marks each, Section C is of 7 questions of three marks each, Section D is of 1value based question of 4 marks and Section E is of 2 questions of five marks each.

iii) There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of 3 marks and two questions of 5 marks each. A student should attempt only one of the alternatives in such questions.

iv) Wherever necessary, the diagram drawn should be neat and properly labeled.

SECTION A

1. Why pollen grains are well preserved as fossils? (1)

2. Name two animals that exhibit Oestrus cycle. (1)

3. Mention the function of the following: (1)

   a) Tapetum b) Sertoli cells

4. Meiocyte of an apple plant contains 34chromosomes. Work out the number of chromosomes found in its endosperm. (1)

5. Name the phenomenon and the cell responsible for the development of drones in honeybees. (1)

SECTION B

6. What are linked genes? X, Y and Z are three genes lying in a sequence on a chromosome. Between X and Z there is 10% recombination and between Y and Z 2% recombination. How many map units are the genes X and Y apart? (2)

7. Give reasons for the following: (2)

   a) Date palms are referred to as dioecious.

   b) presence or absence of hymen is not a reliable indicator of virginity.

8. Infertility clinics provide special techniques to assist couples produce children. Explain any two such techniques. (2)

9. Name the product of fertilization that forms the kernel of coconut. How does kernel differ from coconut water? (2)

10. State the cause and symptoms of colour-blindness in humans. (2)

OR

Explain codominance with the help of one example.

SECTION C

11. a) A mother of one year old son wanted to space her second child. Her doctor suggested the ideal contraceptive for her. Which method of contraception the doctor might have suggested to her? Give

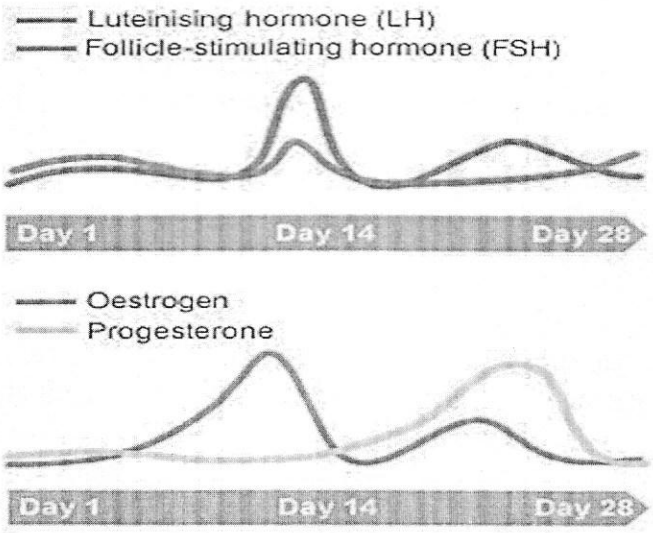
one example of this and explain its contraceptive action.
b) Name the new oral contraceptive developed by Central Drug Research Institute in India (3)

12. Name a disorder, give the karyotype and write the symptoms where a human female suffers as a result of an additional X-chromosome. (3)

13. Draw a neat diagram of a human sperm. Label only those parts along with their functions, that assist the sperm to reach and gain entry into the female gamete. (3)

14. a) What is pollen-pistil interaction and how is it mediated?
b) Explain the mutually rewarding relationship between Yucca plant and a species of moth. (3)

15.



Study the picture given above showing the levels of female hormones during menstruation and correlate the uterine events that take place according to the hormonal levels on: (3)

a) 6-15 days

b) 16-25 days

c) 26-28 days (if the ovum is not fertilized)

16. Explain the development of female gametophyte in an angiospermic flower. (3)

OR

Apomixis resembles asexual reproduction, as well as mimics sexual reproduction in plants. Explain with the help of suitable example.

17. Write the differences between wind-pollinated and insect-pollinated flowers. Give an example of each. (3)

SECTION D

18. Anita was happy when she gave birth to her first child. Her in- laws were dissatisfied at her not giving birth to a male child and blamed Anita. Anita tried to convince her in laws that she had no role in the child's gender. They understood the biological reason but were yet to be satisfied. Anita's husband took up the matter and convinced the parents.

a) What values did Anita's husband show in the above situation?

b) What governs sex determination in humans? How is it different from birds?

c) Why can't Anita be blamed for not giving birth to a male child? (4)

SECTION E

19. a) Where does spermatogenesis occur in human testes? Describe the process of spermatogenesis upto the formation of spermatozoa.
b) Trace the path of spermatozoa from the testes upto the ejaculatory duct only. (5)

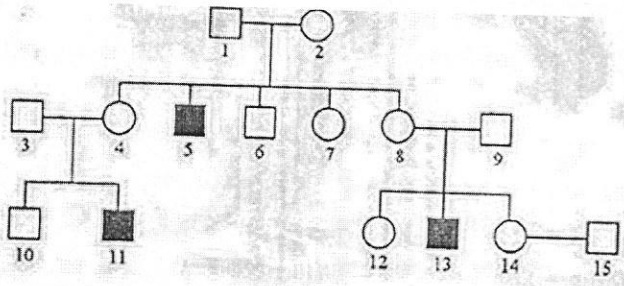
OR

a) When and where are primary oocytes formed in a human female?
b) Trace the development of these oocytes till ovulation (in menstrual cycle)
c) How do gonadotropins influence the developmental process?

20. a) You have seen or heard of many children going for blood transfusions as they are sufferers of thalassemia(also called talassemia major); but their parents are normal and do not show any symptom of the disease.
i) Explain the genetic basis of such diseases appearing among siblings, but not found in parents. (5)
ii) Could they have avoided the birth of such children?
b) Why did Thomas Hunt Morgan select *Drosophila* for his studies in genetics?

OR

a) Haemophilia is a sex linked inheritance condition in humans where a simple cut causes non stop bleeding. Study the pedigree showing the inheritance of haemophilia in a family. Answer the questions that follow:



Give reason which explains that haemophilia is (i) sex linked, and (ii) caused by 'X'-linked gene.

b) Work out a cross to show the type of inheritance in which the genotypic ratio is same as the phenotypic ratio. Also give the ratio.

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