

GREEN VALLEY INTERNATIONAL PUBLIC SCHOOL

CLASS XII

BIOLOGY (044)

MM 70

Time: 3 Hrs

General instructions:

I) All questions are compulsory

II) The question has five sections A,B,C, D AND E

III) Section A contains 16 questions 1 mark each

IV) Section B contains 5 short answer questions 2 marks each

V) Section C contains 7 short answer questions 3 marks each

VI) Section D contains 2 case study

VII) Section E contains 3 long question 5 marks each

SECTION A

Choose the correct option :

1. Aminocentesis is a technique used to

- a. Determine errors in amino acid metabolism in embryo
- b. Pin point specific cardiac ailments in embryo
- c. Determine any hereditary genetic abnormality in embryo
- d. All the above

2. Which of the following cannot be detected in a developing foetus by amniocentesis ?

- a. Down's syndrome
- b. Cystic fibrosis
- c. Colour blindness
- d. Jaundice

3. Temperature of the scrotum which is necessary for the functioning of testis is always around below body temperature

- a. 2°C
- b. 6°C
- c. 4°C
- d. 8°C

4. Which of the following factors affect human health ? (i) Infections (ii) Silent mutations (iii) Life style (iv) Genetic disorders

- a. (i) (ii) and (iv)
- b. (i) and (ii)
- c. (i), (iii) and (iv)

d. (i), (ii), (iii) and (iv)

5. Transfer of pollen grains from anther to stigma of another flower of same plant is known as:

- a. Autogamy
- b. Xenogamy
- c. Geitonogamy
- d. Cleistogamy

6. In which of the following sets of families, the pollen grains are viable for months?

- a. Rosaceae, Liliaceae and Poaceae
- b. Leguminosae, Solanaceae and Rosaceae
- c. Solanaceae, Poaceae and Liliaceae
- d. Brassicaceae, Liliaceae and Poaceae

7. Read the following statements about health and select the incorrect one .

- a. Immune system maintains our health.
- b. Health is defined as a state of complete, physical, mental and social well-being.
- c. Health increases productivity and economic prosperity.
- d. Health increases infant and maternal mortality.

8. Which of the following diseases is non-communicable ?

- a. Flu
- b. Cancer
- c. Diphtheria
- d. Malaria

9. Typhoid fever in human beings is caused by

- a. Plasmodium vivax
- b. Trichophyton
- c. Salmonella typhi
- d. Rhino viruses

10. Which of the following pairs contains an infectious and a non-infectious disease respectively ?

- a. Typhoid and AIDS
- b. AIDS and cancer
- c. Pneumonia and malaria
- d. Cancer and malaria

11. Who is the father of genetic engineering?

- a. Steward Linn
- b. Stanley Cohen
- c. Paul Berg

d.Kary Mullis

12. Which of the following processes/techniques can be included under biotechnology ? (i) In vitro fertilisation (ii) Synthesis of a gene (iii) Correcting a defective gene (iv) Developing a DNA vaccine

Quiz

a.(i) and (ii)

b.(ii) and (iii)

c.(iii) and (iv)

d.(i),(ii),(iii) and (iv)

13. In most mammals, the testes are located in scrotal sac for

a.more space to viseral organs

b.spermatogenesis

c.sex differentiation

d.independent functioning of kidney

14. Assertion : AIDS and hepatitis B are sexually transmitted diseases.

Reason : There is no permanent cure for both of them.

a.If both assertion and reason are true and reason is the correct explanation of assertion

b.If both assertion and reason are true but reason is not the correct explanation of assertion

c.If assertion is true but reason is false

d.If both assertion and reason are false

15. Assertion : Foetal disorders can be diagnosed by chorionic villi sampling.

Reason : Karyotyping can be done for mitotically dividing cells of chorionic villi.

a.If both assertion and reason are true and reason is the correct explanation of assertion

b.If both assertion and reason are true but reason is not the correct explanation of assertion

c.If assertion is true but reason is false

d.If both assertion and reason are false

16. Assertion:. Amnicentesis is often misused.

Reason :Amniocentesis is being used to determine the sex of the foetus so that female foetus may be aborted.

a.If both assertion and reason are true and reason is the correct explanation of assertion

b.If both assertion and reason are true but reason is not the correct explanation of assertion

c.If assertion is true but reason is false

d.If both assertion and reason are false

SECTION B

17. What is cross-pollination?

OR

What are the Principles of Biotechnology?

18. Define double fertilization.

OR

Define Morphogenesis.

19. What do you understand about a recombinant vaccine? Give examples.

OR

20. What is the reason for the absence of menstrual cycles during conception or pregnancy?

21. How do self-incompatibility restrict autogamy? How does pollination occur in such plants?

SECTION C

22. Explain the principle involved in ELISA.

23. Why are proteases added while isolating the DNA?

OR

.A mixture of the fragmented DNA was run on an agarose gel. The gel was stained with ethidium bromide but no bands were observed. What would be the cause?

24. If the sequence of one strand of DNA is written as follows:

5' -ATGCATGCATGCATGCATGCATGC-3'

25. Draw male reproductive Organ and Explain its organs?

26. If a double stranded DNA has 20 per cent of cytosine, calculate the per cent of adenine in the DNA.

27. Is sex education necessary in Schools? Why?

28. Write the effect of high concentration of LH on a mature Graafian follicle?

SECTION D

CASE STUDY

Read the passage given below and answer the following questions:

29. A newly married couple was afraid of using contraceptive and IUD's so they opted a natural method of contraceptive during a random counselling session, the couple found that natural contraceptive is not reliable, instead they can use barrier contraceptive

1) Name two natural methods of contraceptive that could be used by this couple.

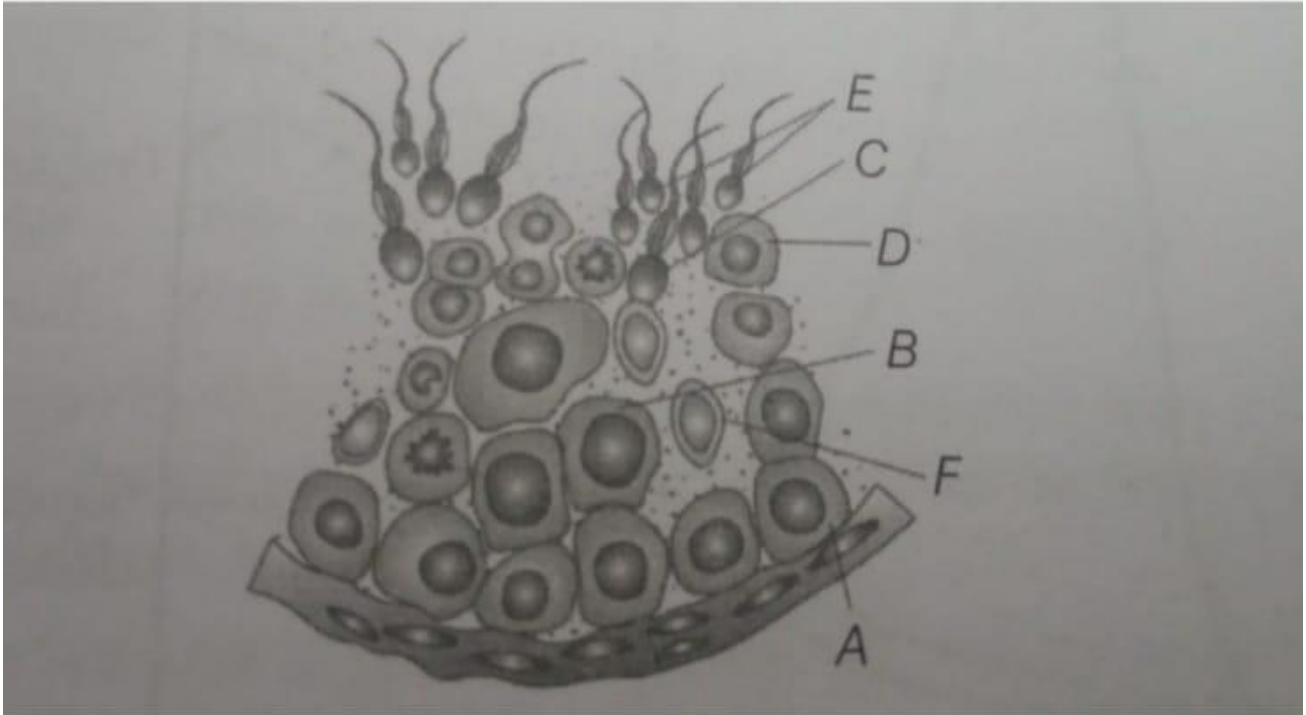
2) Give the example of hormonal IUD cu-IUD and non-medicated IUD.

3) what does contraceptive pills Saheli contains?

4) Mention the benefits of fusion barrier contraceptives

OR

Give example of any two barrier contraceptives that can be used by females (other than condoms).
 30. Study the figure.



- 1) Pick out and name the cells that undergo Spermiogenesis
- 2) Name 'A' and 'B' cells .What is the difference between them with reference to the number of chromosomes?
- 3) What is 'F' cell? Mention the function.
- 4) Pick out and name the Motile cell.

OR

Name the structure of which the given diagram and is a part.

SECTION E

31. Differentiate between the followings:

- (I) Template strand and Coding strand
- (II) S[ermatogenesis and oogenesis
- (III) Testa and Integument

OR

Embryo Transfer and Zygote Intra Fallopian Transfer

32. How many eggs are released by a human ovary in a month? How many eggs do you think would have been released if the mother gave birth to identical twins? Would your answer change if the twins born were fraternal?

33. Why Drosophilla is a suitable material for Genetic study ? Explain?