

Bhavan's Tripura Vidyamandir

1st Quarterly Test : (2025-2026)

Class:- 12

Time:- 2 Hours

Subject :-Biology

Total :- 50 Marks

Name of the student:

Roll

Section:

General Instructions:

- (i) All questions are compulsory.
- (ii) The question paper has five sections and 25 questions. All questions are compulsory.
- (iii) Section-A has 10 questions of 1 mark each; Section-B has 8 questions of 2 marks each; Section- C has 5 questions of 3 marks each; Section- D has 1 question of 5 marks; Section-E has 1 case-based question of 4 marks.
- (iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- (v) Wherever necessary, neat and properly labeled diagrams should be drawn.

SECTION-A

1. A couple with AB and O blood group respectively cannot have a child with:
(a) A (b) B (c) AB (d) O
2. Chasmo-cleistogamous flowers are present in:-
(a) *Viola* (common pansy) (b) *Oxalis*
(c) *Commelina* (d) All the above
3. Remnant of nucellus is known as:-
(a) Scutellum (b) Pericarp (c) Tegellum (d) Perisperm
4. In angiosperms functional megaspore generally develops at :-
(a) Micropylar end (b) Chalazal end (c) Both (d) None
5. Which set of enzymes is found in the acrosome of mammalian spermatozoa :
(a) Hyaluronidase, Corona Penetrating Enzyme (CPE)
(b) Hyaluronidase, CPE, Zona lysin
(c) Hyaluronidase, CPE, Peptidase
(d) Hyaluronidase only
6. Correct sequence in development is:
(a) Fertilization → Zygote → Cleavage → Morula → Blastula → Gastrula
(b) Fertilization → Zygote → Blastula → Morula → Cleavage → Gastrula
(3) Fertilization → Cleavage → Morula → Zygote → Blastula → Gastrula
(4) Cleavage → Zygote → Fertilization → Morula → Blastula → Gastrula
7. Which following homologous structures are mismatched
(a) Clitoris and penis (b) Vagina and prostatic utricle
(c) Scrotum and labia majora (d) Fallopian tube and prostate
8. Multiple alleles control the character of
(a) Only skin color (b) Only blood groups
(c) Blood groups and skin color (d) Sickle-cell

These questions consist of two statements each, printed as Assertion and Reason. While answering these Questions you are required to choose any one of the following four responses.

- (A) If both Assertion & Reason are True & the Reason is a correct explanation of the Assertion.
 (B) If both Assertion & Reason are True but Reason is not a correct explanation of the Assertion.
 (C) If Assertion is True but the Reason is False.
 (D) If both Assertion & Reason are false.

9. **Assertion:** In Mendelian inheritance, alleles segregate during gamete formation.
Reason: This happens because each gamete receives only one allele of a gene.
 10. **Assertion:** During embryonic stage testes descend down and at the time of birth, it comes into scrotum.
Reason: Spermatogenesis process requires less than body temperature.

SECTION-B

11. In a flowering plant a microspore mother cell produces four male gametophytes while a megaspore mother cell forms only one female gametophyte. Explain.
 12. Mention the ploidy of the different types of cells present in the female gametophyte of an angiosperm. (write any four cells)
 13. Write the function of each one of the following:
 i) Seminal vesicle
 ii) Acrosome of human sperm.

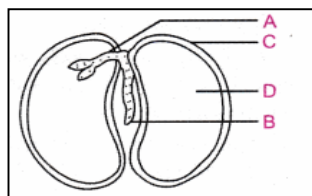
OR

Differentiate between proliferative phase and luteal phase.

14. The presence of a hymen is the indication of virginity, while its absence means the reverse. Discuss the authenticity of the statement in the light of modern understanding of the female reproductive system?
 15. All reproductive tract infections (RTIs) are STDs but all STDs are not RTIs. Justify with example.
 16. Explain the causes and symptoms of any two mendelian genetic disorders. (1+1)
 17. Why is haemophilia generally observed in human males? Explain the conditions under which a human female can be haemophilic.
 18. How does self-incompatibility influence plant breeding techniques?

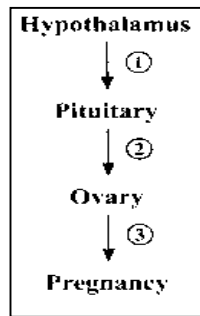
SECTION-C

19. Identify A, B, C & D.



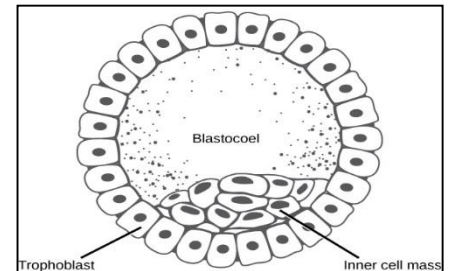
20. (a) A garden pea plant bearing terminal, violet flowers when crossed with another pea plant bearing axial violet flowers, produced axial violet flowers and axial white flowers in the ratio of 3:1. Work out the cross showing the genotypes of the parent pea plants and their progeny.
 (b) Name and state the law that can be derived from this cross and not from a dihybrid cross. (1.5+0.5+1)

21. Discuss the following flow chart with the help of suitable reason.



22.

- Name the stage of human embryo the figure represents.
- Mention the fate of the inner cell mass after implantation in the uterus.
- Where are the stem cells located in this embryo?



23. A village health worker was taking a session with women. She tells the women that one has to be very careful while using oral pills as method of birth control. Wrong usage can actually promote conception. Analyse the statement and compare the merits and demerits of using oral pills and surgical methods of birth control.

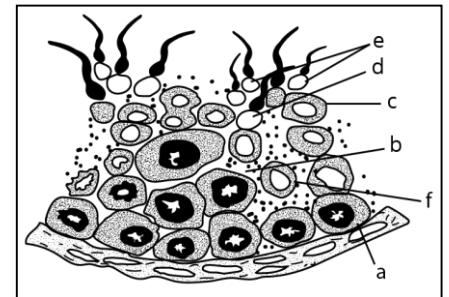
OR

Suggest and explain any three assisted reproductive technologies to an infertile couple.

SECTION-D

24.

- What is being depicted in the diagram?
(0.5+2+1+1.5)
- Name 'a' & 'b' cells. What is the difference between them with reference to the number of chromosomes?
- Pick out & name the motile cells.
- What is 'f' cell? Mention its function.



OR

A flower of brinjal plant following the process of sexual reproduction produces 360 viable seeds. Answer the following questions giving reasons. (1×5)

- How many ovules are minimally involved?
- How many megaspore mother cells are involved?
- What is the minimum number of pollen grains that must land on stigma for pollination?
- How many male gametes are involved in the above case?
- How many microspore mother cells must have undergone reduction division prior to dehiscence of anther in the above case?

SECTION-E

25. In a survey, it was found that a large percentage of adolescents were unaware of reproductive health and contraception. This led to several cases of STDs and unwanted pregnancies.

- Define reproductive health. (1)
- Suggest any two methods to spread awareness among youth. (1)
- Name two STDs and mention their causative organisms. (2)

OR,

Write two features of 'Saheli'.