



ROLL NO.

ST. VIVEKANAND MILLENNIUM SCHOOL

HMT Township, Pinjore

Half Yearly Examination, 2025

Subject: Biology (044)

SET A

Class: XII

Time allowed: 3hrs

MM: 70

General Instructions:

- (i) All questions are compulsory.
- (ii) The question paper has five sections and 33 questions. All questions are compulsory.
- (iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.
- (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 labelled diagrams should be drawn.

Section-A

1. The intine of pollen grain is made up of _____ A _____ and _____ B _____
Select the correct option for and B
 1. A- Cellulose, B- Sporopollenin
 2. A- Cellulose, B- Hemicellulose
 3. A-Cellulose, B- Pectin
 4. A- Sporopollenin B- Pectin
2. The hormone which peaks during ovulation is
 1. Oxytocin
 2. LH
 3. Progesterone
 4. Cortisol
3. The ideal contraceptive for female who want to delay pregnancy and /or space children is
 1. Barrier method
 2. Oral contraceptive
 3. IUD
 4. Periodic Abstinence
4. Presence of more than two allele for a gene for sex unspecified
 1. Polygene
 2. Pleiotropy
 3. Multiple allele
 4. Co- dominance
5. Which chromosome has least number of genes
 - 1 . Chromosome 1
 2. Chromosome Y
 3. Autosomes
 4. Chromosome X

6. Palaeontological evidences for evolution refer to the
1. development of embryo
 2. fossils
 3. homologous organs
 4. analogous organs.
7. "Smack" is a drug obtained from the
- (a) latex of *Papaver somniferum*
 - (b) leaves of *Cannabis sativa*
 - (c) flowers of *Datura*
 - (d) fruits of *Erythroxylum coca*.
8. Find the number of meiosis to form 50 seeds in a typical flowering plant
1. 200
 2. 100
 3. 63
 4. 13
9. Spermiogenesis is a process in which
1. Spermatids change into spermatozoa
 2. Spermatogonia produce spermatids
 3. Spermatocytes give rise to spermatozoa
 4. Dormant spermatozoa become active just before ejaculation
10. Identify the disease which is not sexually transmitted disease
1. Gonorrhoea
 2. Amoebiasis
 3. Syphilis
 4. Chlamydia
11. Immunoglobulins serving as mediators in allergic response are
1. IgE
 2. IgD
 3. IgM
 4. IgA

Assertion-Reason Type Questions

Two statements are given-one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to the following questions from the codes (a), (b), (c) and (d) as given below:

- (a) Both A and R are true and R is correct explanation of the assertion.
- (b) Both A and R are true but R is not the correct explanation of the assertion.
- (c) A is true but R is false.
- (d) A is false but R is true.

12. Assertion: The two chains of DNA have anti-polarity.
Reason: In one chain of DNA, ribose sugar at 5' end consists of a free phosphate moiety while at the other end the ribose has a free 3' OH group.
13. Assertion: Turner's syndrome is caused due to absence of any one of the X and Y sex chromosome
Reason: Such individuals show masculine as well as feminine development.

14. Assertion: Louis Pasteur showed that in flask open to air, new living organisms appeared in the heat killed yeast culture.
Reason: Life arises from pre-existing life.
15. Assertion: Viruses having RNA genome have shorter life span and mutate faster.
Reason: RNA is unstable and thus mutates faster.
16. Assertion: Chemotherapy is a common treatment option for cancer
Reason: Chemotherapy involves the use of radiations to kill cancer cell or stop them from growing and dividing.

Section-B

17. Which is triploid tissue in a fertilized ovule? How is the triploid condition achieved?
18. Placenta acts as an endocrine tissue. Justify.
19. Explain the sex determination in birds
20. "Sweet potato and potato Tuber are the result of convergent evolution."
Justify the statement
21. List the specific symptoms of typhoid. Name its causative agent.

Section-C

22. List the changes that occur when an ovule matures into seed.
23. Describe the process of parturition in humans.
24. Suggest and explain any three Assisted Reproductive Technologies to an infertile couple.
25. Work out a cross to find the genotype of a tall pea plant. Name the type of cross.
26. Describe the structure of Nucleosome.
27. What is Hardy-Weinberg principle? List the factors which affect it.
28. Name the type of human cell HIV attacks on its entry into the body. Explain the events that occur in the cell which further lead to the cause immunodeficiency syndrome.

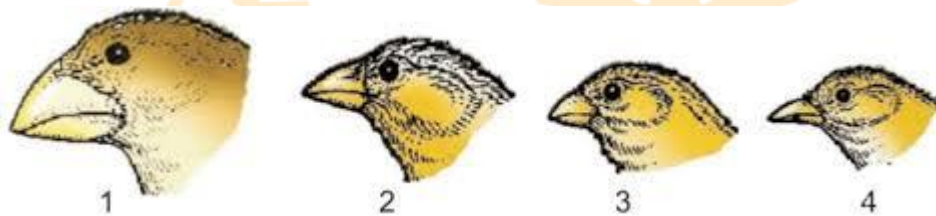
Section-D

29. Mosquitoes are drastically affecting the human health in almost all the developing tropical countries. Different species of mosquitoes cause very fatal diseases so much so that many humans loose their life and if they survive, are unable to put in productive hours to sustain their life. With the result the health index of the country goes down."

Based on your understanding of the above paragraph and related studied concepts, answer questions

- a. Name the form in which Plasmodium gains entry into (i) human body (ii) the female Anopheles body.
- b. Why do the symptoms of malaria not appear in a person immediately after being bitten by an infected female Anopheles?
- c. Explain the events which occur within a female Anopheles mosquito after it has sucked blood from a malaria patient.

30 Darwin found the varieties of finches that he travelled to Galapagos Islands and observed variations in them.



- (i) What role does an individual organism play as per Darwin's theory of natural selection?
- (ii) How did Darwin explain the existence of different varieties of finches on Galapagos Islands?
- (iii) What is "fitness of an individual" according to Darwin?

Section -E

31. Write any six salient features of the human genome as drawn from the human genome project.
32. Explain the genetic basis of blood grouping in human population.
33. Explain menstrual cycle in human female.