

Code: A-B616123-M

I SEMESTER EXAM – 2025-26

3 x 450

Std.: XII

Sub: BIOLOGY

Marks: 70

Date:

Roll No.: _____

Time: 3 Hrs.

General instructions:

The question paper is divided into four sections.

(1) **Section A:** Q. No. 1 contains **Ten multiple choice** type of questions carrying **one** mark each

i. For each MCQ, correct answer must be written along with its alphabet, e.g.,

(a) .../(b) .../(c) .../(d) ...etc.

ii. In case of **MCQ**, evaluation will be done for the **first attempt** only.Q. No. 2 contains **Eight very short answer** type of questions carrying **one** mark each.(2) **Section B:** Q. No. 3 to 14 are short answer type of questions carrying **two** marks each.(3) **Section C:** Q. No. 15 to 26 are short answer type of questions carrying **three** marks each.(4) **Section D:** Q. No. 27 to 31 are long answer type of questions carrying **four** marks each.

(5) Begin the answer of each section on a new page.

Section - A**Q.1. Select the correct alternatives and write the answers:****[10]**

- (i) The maximum volume of air, that is inspired during forced breathing in addition to T.V. is called _____.
 (a) I.R.V. (b) E.R.V. (c) VC (d) DS
- (ii) Enzyme involved in unwinding of DNA is _____.
 (a) Primase (b) DNase (c) Protease (d) Helicase
- (iii) Test tube baby technique is called _____.
 (a) In vivo fertilization (b) In situ fertilization (c) In vitro fertilization (d) natural fertilization
- (iv) What is the percentage of photosynthetically active radiation of the total incident solar radiation?
 (a) More than 50% (b) Less than 70% (c) Less than 50% (d) More than 90%
- (v) Hershey and Chase worked with _____.
 (a) Bacteriophage (b) Drosophila (c) Viruses (d) Streptococci
- (vi) In human female, the fertilized egg gets implanted in uterus after about _____ of fertilization.
 (a) 7 days (b) 30 days (c) 3 weeks (d) 15 days
- (vii) Insect pollinated flowers usually possess _____.
 (a) Large quantities of pollen (b) Dry pollens with smooth surface
 (c) Sticky pollens with rough surface (d) Light weighted pollens
- (viii) Movement of cytoplasm in living organisms is called _____.
 (a) Thrombosis (b) Diffusion (c) Cyclosis (d) Circulation
- (ix) When phenotypic and genotypic ratios are same, it is an example of _____.
 (a) Complete dominance (b) Incomplete dominance
 (c) Multiple alleles (d) Pleiotropy *pleiotropy*
- (x) How many meiotic divisions are needed to produce 44 female gametophytes in angiosperms?
 (a) 11 (b) 44 (c) 22 (d) 66

Q.2. Answer the following questions:**[8]**

- (i) What is absolute mortality?
- (ii) Define: pioneer species.
- (iii) Write full form of VNTS. *variable no of tandem repeats*
- (iv) What is leucocytosis?
- (v) Name the antibody present in colostrum.

P.T.O

- (vi) Which ecosystem shows inverted pyramid of biomass?
- (vii) What is the function of pericardial fluid?
- (viii) State Mendel's Law of purity of gametes.

Section - B

Attempt any EIGHT of the following questions:

[16]

- Q.3. Sketch and label : Structure of nucleosome.
- Q.4. Distinguish between habitat and niche.
- Q.5. Define: (i) Decomposition
(ii) Fragmentation.
- Q.6. State any two applications of DNA fingerprinting.
- Q.7. Enlist any four characteristics of genetic code.
- Q.8. Distinguish between inspiration and expiration.
- Q.9. Explain grafting as a mode of vegetative reproduction in plants.
- Q.10. How is embryo different from zygote?
- Q.11. What is HGP? Give estimated gene number of fruit fly and roundworm.
- Q.12. Sketch and label : Maize seed (monocot).
- Q.13. Write a note on ICSI.
- Q.14. A man's pulse rate is 68 and cardiac output is 5500 cm³. Find the stroke volume.

Section - C

Attempt any EIGHT of the following questions.

[24]

- Q.15. Match the following:

Organisms	Respiratory Surfaces
i) Coelenterates	a) Spiracles
ii) Arthropods	b) Cloaca
iii) Turtles	c) Internal gills
iv) Fish	d) Plasma membrane
v) Insects	e) Lungs
vi) Birds	f) Book gills

- Q.16. Sketch and label: Internal structure of a human heart.
- Q.17. Write a note on carbon cycle.
- Q.18. Name the type of association:
 - (i) Crow feeding the hatchling of koel.
 - (ii) Hummingbirds and host flowering plants.
 - (iii) Clown fish and sea anemone.
- Q.19. Describe the transport of CO₂ by bicarbonate ions.
- Q.20. Write names of three enzymes necessary for digestion of lactose with their functions.
- Q.21. Describe sex determination in birds with chart.

- Q.22. Complete the below analogy:
Down's Syndrome → _____
_____ → XO females
Klinefelter's Syndrome → _____
- Q.23. Describe logistic growth curve with the help of a diagram.
- Q.24. Describe the process of spermatogenesis.
- Q.25. Describe contrivances for autogamy.
- Q.26. Write any three significance of fertilization.

Section - D

Attempt any three of the following questions:

[12]

- Q.27. What is apomixes? Describe the different categories of apomixis.
- Q.28. Describe different phases of menstrual cycle.
- Q.29. Define the following: (i) Test cross
(ii) Pleiotropy
(iii) Co-dominance
(iv) Homologous chromosomes
- Q.30. Describe the different waves of normal ECG with a labelled diagram.
- Q.31. Label the parts A, B, C, D in the given diagram of Anatropous ovule.

