

**Marks : 70**

**Time : 3 Hrs**

**General Instructions:**

- 1. Sections A:** Q. No. 1 contains **10** multiple choice questions carrying **one mark** each  
Q. No. 2 contains **8** very short answer type questions carrying **one mark** each
- 2. Section B:** Q. No. 3 to Q. No. 14 are **12** short answer-I type questions carrying **two marks** each. Attempt any **eight** questions.
- 3. Section C:** Q. No. 15 to Q. No. 26 are **12** short answer-II type questions carrying **three marks** each. Attempt any **eight** questions.
- 4. Section D:** Q. No 27 to Q. No. 31 are **5** long answer type questions carrying **four mark**  
Attempt any **three** questions.

**SECTION A**

Q.1. Select and write correct answer:

1. In angiosperms, triple fusion results in the formation of 1  
A) Primary endosperm nucleus      B) Zygotic nucleus  
C) Secondary nucleus      D) polar nucleus
2. In colour blindness, a person is unable to distinguish between red and green colours as both the colours appear 1  
A) white      B) black      C) yellow      D) grey
3. Failure of testis to descend from abdomen into scrotum leads to sterility called 1  
A) atresia      B) Cryptorchidism      C) gastrulation      D) amniocentesis
4. Theory of mutation was given by 1  
~~A) Darwin~~      B) Hugo de varies      C) J.B.S.Haldane      D) Mendel
5. Gibberlin was synthesized from 1  
A) Gibberellin fujikuroi      B) gelidium      C) Gracilaria      D) Aspergillums
6. Blood pressure is measured with the help of instrument called 1  
A) ammeter      B) sphygmanometer      C) ECG      D) stethoscope
7. Adrenocorticotropic is a hormone of 1  
A) pituitary      B) adrenal cortex      C) thyroid      D) adrenal medulla
8. Of the total incident solar radiation, less than \_\_\_\_\_ % of it is photosynthetically active radiation (PAR) 1  
A) 80      B) 50      C) 20      D) 5
9. In a plant cell, the shrinking of protoplasm is called 1  
A) turgidity      B) flaccidity      C) DE plasmolysis      D) plasmolysis
10. The central dogma of protein synthesis is 1  
A) DNA  $\xrightarrow{\text{Translation}}$  mRNA  $\xrightarrow{\text{Transcription}}$  protein  
B) DNA  $\xrightarrow{\text{Transcription}}$  mRNA  $\xrightarrow{\text{Translation}}$  protein  
C) RNA  $\xrightarrow{\text{Reolication}}$  DNA  $\xrightarrow{\text{Transcription}}$  protein  
D) RNA  $\xrightarrow{\text{Transcription}}$  mRNA  $\xrightarrow{\text{Translation}}$  protein

Q.2 Answer the following:

1. Name the components of ecosystem. 1
2. Organic evolution 1
3. What is amniocentesis? 1
4. What is crossing over? 1
5. What are immunoglobulins? 1

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|----|---|---|
| 6. | Give the full form of IAA.                                    | 1 |
| 7. | What is bio fortification?                                    | 1 |
| 8. | Give symptoms of the disease caused by hypo secretion of ADH. | 1 |

**SECTION B**

- |       |  |   |
|-------|--|---|
| Q.3   | Write a short note on : parthenocarpy                                    | 2 |
| Q.4   | Distinguish between : Homozygous and Heterozygous                        | 2 |
| Q.5   | Define or explain the term : Plasmolysis                                 | 2 |
| Q.6   | Write a note on Genetic drift  | 2 |
| Q.7   | What is colostrum?   | 2 |
| Q.8   | Give the scientific name of microorganisms used as a source of SCP.      | 2 |
| Q.9   | How are minerals absorbed by plants?                                     | 2 |
| Q.10  | Why restriction enzymes are called as molecular scissors?                | 2 |
| Q.11. | In the ecosystem, the energy flow is unidirectional. Give reason.        | 2 |
| Q.12. | What can we do to protect biodiversity?                                  | 2 |
| Q.13. | Give reason: Closed circulation is more efficient than open circulation. | 2 |
| Q.14. | What is the role of limbic system?                                       | 2 |

**SECTION C**

Attempt Any Eight

- |       |  |   |
|-------|--|---|
| Q.15. | Compare <del>X</del> -chromosome and Y- chromosome.  | 3 |
| Q.16. | Explain movement of water in the root.   | 3 |
| Q.17. | Describe the process of double fertilization.  | 3 |
| Q.18. | <del>Name</del> two types of particulate pollutants found in air. Add a note on ill effects of same on human health. | 3 |
| Q.19. | Explain the external genitalia of men detail.  | 3 |
| Q.20. | Write a note on: Vestigial organs.   | 3 |
| Q.21. | Explain the difference: Inborn immunity and Acquired immunity.   | 3 |
| Q.22. | Give economic importance of fishery.   | 3 |
| Q.23. | Write short notes: DNA packaging in Eukaryotic cell.   | 3 |
| Q.24. | Describe the structure of the wall of the Heart.   | 3 |
| Q.25. | Describe the three meninges that form the protective covering of brain   | 3 |
| Q.26. | Enlist and explain the important characteristics of a population.  | 3 |

**SECTION D**

Attempt Any Three :

- |       |   |   |
|-------|---|---|
| Q.27  | Describe in detail the three main parts of forebrain  | 4 |
| Q.28. | Explain the histological structure of ovary in human. | 4 |

**OR**

Write a short note on: Development of ovary.

- |       |   |   |
|-------|---|---|
| Q.29. | With the help of neat labeled diagram, describe the conducting system of the human heart. | 4 |
| Q.30. | What is colour blindness? Explain the inheritance with the help of suitable chart.        | 4 |
| Q.31. | Describe the development of seed and fruit.   | 4 |