

Date: 09.01.2023

Day: Monday

Time: 02.30 pm to 05.30 pm

Marks: 70

Note: General instructions: The question paper is divided into four sections.

- 1) Section A: Q. No.1 contains TEN MCQ type questions carrying one mark each Q. No. 2 contains Eight very short answer type questions carrying one mark each.
- 2) Section B: Q. No. 3 to Q. No.14 contains TWELVE short answer type questions carrying two marks each.
- 3) Section C: Q. No. 15 to Q. No.26 contains TWELVE short answer type questions carrying three marks each.
- 4) Section D: Q. No. 27 to Q. No.31 contains FIVE long answer type questions carrying four marks each.
- 5) For each MCQ correct answer must be written along with alphabet.
- 6) Figure to the right indicates full marks.

Section - A

Q.1 Select the appropriate answer from given options and rewrite the sentence:-

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- i. Lemur and Tarsier belong to
a) prosimi b) pongidae c) homonidae d) hyalobatidae
- ii. In translation, during protein synthesis, t-RNA carrying dipeptide moves to the p -site, this process is called
a) Transcription b) Translocation c) Transduction d) Transformation
- iii. One of the following plant is an example of 'Hydrophily' pollination
a) Jowar b) Rose c) Sugarcane d) Vallisneria
- iv. Human protein, 'Relaxin' which is produced by r - DNA technology, used to treat the disease.....
a) anaemia b) diabetes c) emphysema d) parturition
- v. 'Elixir of Life' term used for following one
a) air b) water c) sunlight d) temperature
- vi. One of the following hormone induces spermatogenesis in human
a) LH b) GH c) FSH d) ICSH
- vii. In Limunus, respiration is done by
a) lungs b) book lungs c) book gills d) trachea
- viii. Which one of the following is called 'bleeders disease'?
a) Haemophilia b) Polycythemia c) Thrombocytopenia d) Anaemia
- ix. Odd man out
a) Linear growth curve b) Exponential growth curve
c) Sigmoid growth curve d) Absolute growth curve
- x. The Narrow cavity of diencephalon is called
a) I - ventricle b) II - ventricle c) III - ventricle d) IV - ventricle

Q.2 Answer the following.

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- i. Define the term 'Biopiracy'.
- ii. Name the 'Fertilizin receptor' protein of 'zona pelucida'.
- iii. What is megasporogenesis?
- iv. Give reason : ABA is known as 'stress hormone'.
- v. Define 'Ecological succession'.
- vi. Name the region where Rod and Cone cells are absent in human eye.
- vii. Write the effects of Cocain' on human health.
- viii. Enlist three phases of logistic growth curve.

Section - B

16

Attempt any Eight:-

- Q.3 Enlist the steps involved in the process of r - DNA technology.
- Q.4 Sketch and label 'Transcription unit'.
- Q.5 Write a short note on 'global warming'.
- Q.6 Explain any two characteristics / limitation of 'Capillarity Theory'.
- Q.7 Write a short note on 'Vegetative Reproduction'.
- Q.8 Sketch and label 'Gemmule'.
- Q.9 Explain any two characteristics of genetic code.
- Q.10 Write short note on 'Biological diversity Act 2002'.
- Q.11 What are the symptoms of 'Klinefelters syndrome'.
- Q.12 Write a short note on 'vestigial organs'.
- Q.13 Name the hormones and their functions of 'Neurohypophysis'.
- Q.14 Write a note on platelets.

Section - C

24

Attempt any Eight:-

- Q.15 Write number and names of mixed nerves.
- Q.16 Sketch and label 'Working of Lac operon'.
- Q.17 Explain different steps of decomposition.
- Q.18 Differentiate between 'Inspiration and Expiration'.
- Q.19 Complete the table, given below:-

Sr. No	Crop	Variety
1)	Wheat
2)	Cauliflower
3)	<i>pusa parbhakar</i>
4)	<i>pusa sadabahar</i>
5)	Okra
6)	<i>pusa sem - 2</i>

- Q.20 Explain the haplo - diploid method of sex - determination.
- Q.21 What is speciation? Distinguish between Allopatric and Sympatric speciation.
- Q.22 Define Biofortification. Describe it with two examples.
- Q.23 Describe any three types of cancer, according to the types of tissues affected.
- Q.24 Distinguish between Habitat and Niche.
- Q.25 Explain short day and long day plants.
- Q.26 Write a note on 'Mechanism of PCR'.

Section - D

12

Attempt any Three:-

- Q.27 Enlist and explain 'outbreeding devices' in plants with examples.
- Q.28 With a neat, labelled diagram explain mechanism for opening and closing of stomata.
- Q.29 Explain working mechanism of human heart during atrial systole and ventricular systole.
- Q.30 Describe the human male reproductive system with respect to
 - a) Name the cells of testis which nourish the sperms. (01 marks)
 - b) Give the components of semen. (02 marks)
 - c) Give reason - male urethra is known as 'Urinogenital duct'. (01 marks)
- Q.31 Identify the labels and write their functions

