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First Revision Examination - 2024

BIOLOGY

PART - I

Max. Marks : 70

Time : 3.00 hrs.

Instruction : 1) Check the questions paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.

2) Use Blue or Black ink to write and underline and pencil to draw diagram.

PART-I (BIO BOTANY)
(Marks: 35)

8x1=8

Note: i) Answer all the questions.

ii) Choose the most appropriate answer from the given four alternatives and write the option code and their corresponding answer.

- Read the given statements and select the correct option
 - Hydrophytes possess aerenchyma to support themselves in water
 - Seeds of *Viscum* are positively photoblastic as they germinate only in presence of light
 - Hygroscopic water is the only soil water available to roots of plants growing in soil as its present inside the micropores
 - High temperature reduces use of water and solute absorption by roots

a) i, iii, and iii only b) ii, iii and iv c) ii and iii only d) i and ii only
- Importing better varieties and plants from outside and acclimatizing them to local environment is called

a) Cloning b) heterosis c) Selection d) introduction
- The plants which are grown in silvopasture system are

a) *Sesbania* and *Acacia* b) *Solenum* and *Crotalaria* c) *Clitoria* and *Begonia* d) Teak and Sandal
- Which Mendelian idea is depicted by a cross in which the F₁ generation resembles both the parents?

a) Incomplete dominance b) Law of Dominance c) Inheritance of one gene d) Co-dominance
- An analysis of chromosomal DNA using the southern hybridization technique does not use

a) Electrophoresis b) Blotting c) Autoradiography d) Polymerase Chain Reaction
- Match list I with list II

Biofertilizer	Organisms
i) Free living N ₂	a) <i>Aspergillus</i>
ii) Symbiotic N ₂	b) <i>Amanita</i>
iii) P Solubilizing	c) <i>Anabaena azollae</i>
iv) P Mobilizing	d) <i>Azotobacter</i>

a) i-c, ii-a, iii-b iv-d b) i-d, ii-c, iii-a, iv-b c) i-a, ii-c, iii-b, iv-d d) i-b, ii-a, iii-d, iv-c
- Arrange the correct sequences of ecological hierarchy starting from lower to higher level

a) Individual organism → population landscape → Ecosystem b) Landscape → Eco system → Biome → Biosphere

c) Community → Ecosystem → Landscape → Biome d) Population → Organism → Biome → Landscape
- Transmitting tissue is found in

a) Micropylar region of ovule b) Pollen tube wall c) Stylar region of gynoecium d) Integument

SECTION - 2

Note: Answer any four of the following questions.

(4x2=8)

- What is Cantharophily?
- Pyramid of energy is always upright. Give reasons.
- Differentiate primary introduction from secondary introduction.
- Give definitions for organic farming
- What are the enzymes you can use to cut terminal and internal phospho di ester bond of nucleotide sequence?
- Discuss which wood is better for making furniture

SECTION - 3

Note: Answer any three of the following questions. Question No. 19 is compulsory.

(3x3=9)

- "Tissue culture is the best method for propagating rare and endangered plant species"-Discuss
- What is TSM? How does it classified and what does it focuses on?
- Mention the name of man-made cereal. How it is formed?
- What do you know about the world pBR332?
- Generally human activities are against to the ecosystem, where as you student how will you help to protect ecosystem?

SECTION - 4

Note: Answer all the questions.

(5x2=10)

- a) With a suitable diagram explain structure of an ovule. (OR)
- b) What are the restriction enzyme? Mention their types with role in Biotechnology.
- a) Explain afforestation with case studies. (OR)
- b) List any five morphological adaptations of Halophytes

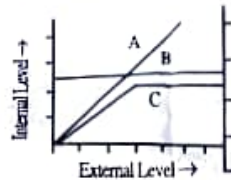
PART-II (BIO ZOOLOGY) (Marks: 35)
SECTION - 1

8x1=8

Note: i) Answer all the questions.

ii) Choose the most appropriate answer from the given four alternatives and write the option code and their corresponding answer.

- The mature sperms are stored in the a) seminiferous tubules b) Vas deferens c) Epididymis d) Seminal vesicle
- Dolly the sheep was obtained by a technique known as
a) Cloning by gene transfer b) Cloning without the help of gametes c) Cloning by tissue culture of somatic cells
d) Cloning by nuclear transfer
- The figure given below is a diagrammatic representation of response of organism to abiotic factors. What do A, P and C represent respectively?



- A- Conformer B- Regulator C-Partial Regulator
 - A- Regulator B- Partial Regulator C- Conformer
 - A- Partial Regulator B- Regulator C- Conformer
 - A- Regulator B- Conformer C- Partial Regulator
- The wings of birds and butterflies is an example of
a) Adaptive radiation b) Convergent evolution c) Divergent evolution d) Variation
 - What can be the blood group of offspring when both parents have AB blood group?
a) AB only b) A, B and AB c) A, B, AB, O d) A and B only
 - The 'Thickness' of Stratospheric Ozone layer is measured in/on :
a) Sieverts units b) Dobson units c) Melson units d) Beaufort scale
 - Match the following and choose the correct combination form the Options given below.

Column I

- A. Mutualism
B. Commensalism
C. Parasitism
D. Competition
E. Predation

Column II

1. Lion and deer
2. Round a worm and man
3. Birds compete with squirrels for nuts
4. Sea anemone on hermit crab
5. Barnacles attached to whales

- A - 4, B - 5, C - 2, D - 3, E - 1 b) A - 3, B - 1, C - 4, D - 2, E - 5 c) A - 2, B - 3, C - 1, D - 5, E - 4
d) A - 5, B - 4, C - 2, D - 3, E - 1
- The purpose of biological treatment of water is to _____
a) Reduce BOD b) Increase BOD c) Reduce Sedimentation d) Increases Sedimentation

SECTION - 2

(4x2=8)

Note: Answer any four of the following questions.

- Give reasons: Genetic code is 'universal'.
- What are holandric genes?
- What are the ways by which organisms respond to abiotic factors?
- What are the three levels of bio diversity?
- A patient was hospitalized with fever and chills. Merozoites were observed in her blood. What is your diagnosis?
- Differentiate Foeticide and infoeticide.

SECTION - 3

(3x3=9)

Note: Answer any three of the following questions. Question No. 19 is compulsory.

- Give the characters of a Biome?
- Explain the process of replication of retrovirus after it gains entry into the human body.
- Autoimmunity is a misdirected immune response. Justify
- i) Write the scientific name of the Filarial worm that causes filariasis
ii) Write the symptoms of Filariasis. iii) How is this disease transmitted?
- Explain the genetic basis of ABO blood grouping in man.

SECTION- 4

(2x5=10)

Answer all the questions.

- a) Explain the structure of immunoglobulin with suitable diagram. (OR)
b) How is sex determined in human beings?
- a) Differentiate between Tundra and Taiga Biomes. (OR)
b) Explain the formation of a nucleosome.