

## Standard 12

Time Allowed: 3.00 Hours

## BIOLOGY

Maximum Marks: 70

## BIO-BOTANY

Marks: 35

8 × 1 = 8

## I. Choose the correct answer:

- In a fresh water environment like pond, rooted autotrophs are
  - Nymphaea and typha
  - Ceratophyllum and utricularia
  - Wolffia and pistia
  - Azolla and lemna
- Profundal zone is predominated by heterotrophs in a pond ecosystem, because of
  - with effective light penetration
  - no effective light penetration
  - complete absence of light
  - a and b
- The unit for measuring ozone thickness
  - Joule
  - Kilos
  - Dobson
  - Watt
- Jaya and Ratna are the semi dwarf varieties of
  - wheat
  - rice
  - cowpea
  - mustard
- Groundnut is native of \_\_\_\_\_
  - Philippines
  - India
  - North America
  - Brazil
- An example for edible underground stem is
  - Carrot
  - Groundnut
  - Sweet potato
  - Potato
- Ratio of complementary gene is
  - 9:3:4
  - 12:3:1
  - 9:3:3:4
  - 9:7
- If 20J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain.  
Plant → Mice → Snake → Peacock
  - 0.02J
  - 0.002J
  - 0.21J
  - 0.002J

## II. Answer any four of the following:

4 × 2 = 8

- What is reproduction?
- Define Genetics.
- What are restriction enzyme?
- What is mutualism?
- Expand CCS.
- What is pseudo cereals? Give an example.

## III. Answer any three of the following:

3 × 3 = 9

(Q.No. 19 is compulsory)

- Differentiate bio-medicines and botanical medicines.
- What is seed ball?
- Define crossing over.
- What are multiple alleles?
- Draw a neat labelled diagram of the structure of embryo sac.

## IV. Answer all the following:

2 × 5 = 10

- Enumerate the characteristics features of Entomophilous flower.

(OR)

- Mention the application of Biotechnology.

- List out any five morphological adaptations of halophytes.

(OR)

- How will you prepare an organic pesticide for your home garden with the vegetables available from your kitchen?

**I. Choose the best answer:**

- 1) In which type of reproduction only males are produced \_\_\_\_\_  
 a) Arrhenotoky      b) Thelytoky      c) Amphitoky      d) None
- 2) Human Ovum is \_\_\_\_\_  
 a) Non-cleidoic      b) Alecithal      c) Microscopic      d) All
- 3) Which of the following phenotype is not possible in progeny of the parental genotype combination  $I^A I^O \times I^A I^B$ ?  
 a) AB      b) O      c) A      d) B
- 4) mRNA molecule is produced by \_\_\_\_\_  
 a) Replication      b) Transcription      c) Duplication      d) Translation
- 5) Who proposed the Germplasm theory?  
 a) Darwin      b) August Weismann  
 c) Lamarck      d) Alfred Wallace
- 6) Allergy involves \_\_\_\_\_  
 a) IgE      b) IgG      c) IgA      d) IgM
- 7) Lion predatory on deer is an example of \_\_\_\_\_  
 a) Parasitism      b) Competition      c) Mutualism      d) Ammensalism
- 8) The project Tiger was launched in the year \_\_\_\_\_  
 a) 1973      b) 1974      c) 1972      d) 1971

**II. Answer any four questions:**

4×2=8

- 9) Define Gametogenesis.
- 10) What is meant by Genopore?
- 11) What is meant by Atavism?
- 12) Reason for mental depression.
- 13) Define Oenology.
- 14) What is meant by phototropism?

**III. Answer any three Questions:**

3×3=9

**(Q.No. 19 is compulsory)**

- 15) Draw and label the human ovum.
- 16) Aims of Human Genome project.
- 17) Reason for loss of Bio-Diversity.
- 18) Tabulate the Incubation periods of various types of malaria.
- 19) Role of SRY in sex determination.

**IV. Answer all the following:**

2×5=10

- 20) Describe the various phases of menstrual cycle.

**(OR)**

Explain any one autosomal aneuploidy and any one allosomal aneuploidy in Human beings.

- 21) Draw and explain the structure of Immunoglobulin.

**(OR)**

Properties of soil.

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