

**Standard 12****BIOLOGY**

Time: 3.00 Hrs.

Marks: 70

**Note:** Candidate should answer Part - I (Bio-Botany) and Part - II (Bio-Zoology) in separate answer - books.

**PART - I [BIO-BOTANY]****Marks: 35****Section - I****Note:** i) Answer all the questions.**8×1=8**

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

- 1) The genotype of a plant showing the dominant phenotype can be determined by
  - a) Test cross
  - b) Dihybrid cross
  - c) Pedigree analysis
  - d) Back cross
- 2) The constant temperature in plant tissue culture is
  - a)  $27^{\circ}\text{C} \pm 2^{\circ}\text{C}$
  - b)  $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$
  - c)  $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$
  - d)  $27^{\circ}\text{C} \pm 3^{\circ}\text{C}$
- 3) **Choose the correctly matched sequence:**

a) Primary succession	-	i) Green plants are dominant during early stages
b) Autotrophic succession	-	ii) Developing in disturbed area
c) Allogenic succession	-	iii) Developing in barren area
d) Secondary succession	-	iv) Occurs as a result of abiotic factors

  - a) a-iii, b-iv, c-i, d-ii
  - b) a-iii, b-i, c-iv, d-ii
  - c) a-iv, b-iii, c-ii, d-i
  - d) a-iv, b-i, c-ii, d-iii
- 4) Changing the codon AGC to AGA represents
  - a) missense mutation
  - b) frame shift mutation
  - c) deletion mutation
  - d) non-sense mutation
- 5) **Choose correctly matched pair:**

a) Dye	-	Lawsonia inermis
b) Pulp	-	Hevea brasiliensis
c) Timber	-	Cyperus papyrus
d) Rubber	-	Shorea robusta
- 6) Importing better varieties and plants from outside and acclimatizing them to local environment is called
  - a) heterosis
  - b) introduction
  - c) cloning
  - d) selection
- 7) **Choose the wrong statements:**
  - i) Gladiolus is a indicator for nitrate.
  - ii) The endemic center for Hardwickia binata is Southern Western Ghats.
  - iii) Prosopis juliflora is an invasive species native to Mexico and South America.
  - iv) Appiko movement was started in Uttara Karnataka.
  - a) ii, iii, iv
  - b) i, iii
  - c) i, iii, iv
  - d) i, ii

## V12Bio

8) **Assertion** : Agrobacterium tumefaciens is popular in genetic engineering because this bacterium is associated with the root nodules of all cereals and pulse crops.

**Reason** : A gene incorporated in the bacterial chromosomal genome get automatically transferred to the plant with which associated.

- Both Assertion and Reason are true and Reason is the correct explanation for Assertion.
- Assertion is true but Reason is false.
- Both Assertion and Reason are false.
- Assertion is false but Reason is true.

### Section - II

**Answer any four of the following:**

**4×2=8**

- Write a note on Heterostyly.
- What is co-evolution?
- Define : Explant
- What is synapsis? What are its types?
- Give four examples of plants cultivated in commercial agroforestry.
- Differentiate: Bio-medicines and Botanical medicines

### Section - III

**Answer any three of the following. Q.No. 19 is compulsory:**

**3×3=9**

- Differentiate: Incomplete dominance and Codominance.
- What is Albedo effect? Write its effect.
- Write the risk of genetically modified foods.
- Explain the best suited type followed by plant breeders at present.
- Photosynthesis follows the First law of thermodynamics - Justify the statement.

### Section - IV

**Answer all the questions:**

**2×5=10**

- Give a concise account on steps involved in fertilization of an angiospermic plant.

(OR)

  - Compare the various types of blotting technique.
- What is hybridization? Explain the steps involved in hybridization.

(OR)

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

25

SECTION - 1

MARKS - 30

I) ANSWER ALL THE QUESTIONS :

- 1) The male sex hormone testosterone is secreted by
  - a) Sertoli cells
  - b) Leydig cell
  - c) Epididymis
  - d) Seminal gland
- 2) ZW-ZZ System of sex determination occurs in
  - a) fishes
  - b) reptiles
  - c) birds
  - d) All of these
- 3) Who Proposed the Germplasm theory?
  - a) Darwin
  - b) August Weismann
  - c) Lamarck
  - d) Alfred Wallace
- 4) Choose the correctly match pair
 

a) Amphetamines	Stimulant
b) LSD	Narcotic
c) Heroin	Psychotropic
d) Benzodiazepine	Pain Killer
- 5) The Purpose of biological treatment of waste water is to
  - a) Increase BOD
  - b) Reduce BOD
  - c) Reduce Sedimentation
  - d) Increase sedimentation
- 6) The first Clinical gene therapy was done for the treatment of
  - a) AIDS
  - b) Cancer
  - c) Cystic Fibrosis
  - d) SCID
- 7) Which one of the following are at high risk extinction due to habitat destruction.
  - a) Mammals
  - b) Birds
  - c) Echinoderms
  - d) Amphibians
- 8) In the E-waste generated by the mobile phones, which among the following metal is most abundant?
  - a) copper
  - b) Silver
  - c) Palladium
  - d) Gold

Section - 2

II) Answer any four of the following questions:

- 9) What is Parthenogenesis? Give two examples from animals.
- 10) What is Criss-Cross Inheritance?
- 11) What are DNA Vaccines?
- 12) List out the major gases seems to be found in the primitive earth?
- 13) Differentiate foeticide and Infanticide.
- 14) What is Natality?

Section - 3

III) Answer any three of the following questions:- (Question number 17 is Compulsary)

3 X 3 = 9

- 15) What are applications of karyotyping?
- 16) Differentiate between somatic cell gene therapy and germline gene therapy.
- 17) Write notes on "Eutrophication".
- 18) Discuss briefly - "Ecosan".
- 19) Compare and Contrast the Insite and exsite conservation.

Section - 4

IV) Answer the following questions:-

2 X 5 = 10

- 20) Give a Schematic representation of spermatogenesis in humans.  
(or)  
List out the various causes for biodiversity losses.
- 21) Explain the genetic basis of ABO blood grouping man.  
(or)  
Explain the structure of immunoglobulin.