



## Standard 12

### BIOLOGY

Time: 3.00 Hrs.

Marks: 70

#### PART - 1 [BIO-BOTANY]

Marks: 35

#### Section - 1

- 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) First cell of male gametophyte in angiosperm is \_\_\_\_\_.  
a) Microspore      b) Megaspore      c) Nucleus      d) PEN
  - 2) How many different kinds of gametes will be produced by a plant having the genotype AABbCC?  
a) Three      b) Four      c) Nine      d) Two
  - 3) The concept of gene mapping was first developed by \_\_\_\_\_.  
a) C.B. Bridges      b) Alfred H. Sturtevant      c) T.H. Morgan      d) H.J. Muller
  - 4) ECORI cleaves DNA at \_\_\_\_\_.  
a) AGGGTT      b) GTATATC      c) GAATTC      d) TATAGU
  - 5) The prevention of large scale loss of biological integrity  
a) Biopatent      b) Bioethics      c) Biosafety      d) Biofuel
  - 6) The types of forests seen in the districts of Nagapattinam, Thanjavur and Thiruvavur.  
i) Mangrove forest      ii) Deciduous forest  
iii) Salt mangrove forest      iv) Coniferous forest  
a) (i) only      b) (ii) only      c) (i) and (iii) only      d) All of them
  - 7) Match:  

1. Mellitophily	-	i)	Snails
2. Malacophily	-	ii)	Bats
3. Myrmecophily	-	iii)	Bees
4. Chieropterophily	-	iv)	Ants

a) 1-(ii) 2-(iii) 3-(iv) 4-(i)      b) 1-(i) 2-(iii) 3-(iv) 4-(ii)  
c) 1-(iii) 2-(i) 3-(iv) 4-(ii)      d) 1-(i) 2-(iv) 3-(iii) 4-(i)
  - 8) Fruit colour in squash is an example of \_\_\_\_\_.  
a) Recessive epistasis      b) Dominant epistasis  
c) Complementary genes      d) Inhibitory genes

#### Section - 2

Answer any four of the following questions:

4×2=8

- 9) What are the materials used to grow micro organism like spirulina?
- 10) What is phytoremediation?
- 11) What is test cross?
- 12) What are clenes?
- 13) Give the types of synopsis.
- 14) What is cybrid?

#### Section - 3

Answer any three of the following questions.

3×3=9

Question No: 19 is compulsory.

- 15) Give the names of the scientists who rediscovered mendelism.
- 16) What do you know about the word pBR322?
- 17) Draw and label the T.S. of mature anther.
- 18) Give an account on Cryopreservation.
- 19) P  $2n \times 4x = 28 \times 2n = 2x = 14$

G A      ↓  $n = x = 7$

A Write gametic condition

$$2n = 3x = 21$$

B Write the name of the plant

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Section - 4

Answer all the questions:

2×5=10

- 20) a) Describe Dominant epistasis with an example. (OR)  
 b) With a suitable diagram explain the structure of an ovule.  
 21) a) What is single cell protein? Mention its application. (OR)  
 b) Explain the basic concept involved in plant tissue culture.

## PART - II [BIO-ZOOLOGY]

Marks: 35

8×1=8

I. Write correct answers:

- 1) In which type of parthenogenesis are only male produced?  
 a) Arrhenotoky    b) Thelytoky    c) Ambitoky    d) Both a and b  
 2) The male sex hormone testosterone is secreted from  
 a) Sertoli cells    b) Leydig cells    c) Epididymis    d) Prostate gland  
 3) A contraceptive pill prevents ovulation by  
 a) blocking fallopian tube  
 b) inhibiting release of FSH and LH  
 c) stimulating release of FSH and LH  
 d) causing immediate degeneration of released ovum  
 4) 'Universal Donor' and 'Universal Recipients' blood group are \_\_\_\_\_ and \_\_\_\_\_ respectively.  
 a) AB, O    b) O, AB    c) A, B    d) B, A  
 5) The total number of nitrogenous bases in human genome is estimated to be about  
 a) 3.5 million    b) 35000    c) 35 million    d) 3.1 billion  
 6) Who published the book "origin of species" by natural selection in 1859?  
 a) Charles Darwin    b) Lamark  
 c) Weisman    d) Hugo de Vries  
 7) The Neanderthal man had the brain capacity of  
 a) 650 - 800 cc    b) 1200 cc    c) 900 cc    d) 1400 cc  
 8) Allergy involves  
 a) IgE    b) IgG    c) IgA    d) IgM

II. Answer any four questions:

4×2=8

- 9) Why is the offspring formed by asexual reproduction referred as a clone?  
 10) Expand the acronyms: (a) FSH (b) hCG  
 11) How are STD transmitted?  
 12) What are holandric genes?  
 13) Differentiate - Template strand and Coding strand.  
 14) List out the major gases seems to be found in the primitive earth.

III. Answer any three questions:

3×3=9

Write 19th question answer compulsory.

- 15) Differentiate between Binary fission in amoeba and multiple fission in plasmodium.  
 16) What is inhibin? State its function.  
 17) Differentiate facticide and infanticide.  
 18) State any three goals of the human genome project.  
 19) What is vaccine? What are its types.

IV. Answer the following questions:

2×5=10

- 20) What is parthenogenesis? Explain it and give two examples. (OR)  
 Explain the various phases of the menstrual cycle.  
 21) Write the preventive measures of STD. (OR)  
 Give an account of genetic control of Rh factor.