

v12Bio

Virudhunagar District Common Examinations  
Common Half Yearly Examination - December 2022

## Standard 12

## BIOLOGY

Time: 3.00 Hrs.

Marks: 70

- Instructions:**
1. Check the question 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 diagrams.

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

## PART - I [BIO-BOTANY]

Marks: 35

## Section - I

8×1=8

**Note:** i) Answer all the questions.

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

- 1) Size of pollen grain in Myosotis is \_\_\_\_\_ micrometer.  
a) 10                      b) 20                      c) 200                      d) 2000
- 2) Alternative forms of a gene are / is called  
a) Genome                      b) Alleles                      c) Genotype                      d) Genetic code
- 3) **Match the following:**

1. Exonuclease	-	A) add or remove phosphate
2. Endonuclease	-	B) binding the DNA fragment
3. Alkaline phosphatase	-	C) cut the DNA at terminus
4. Ligase	-	D) cut the DNA at middle

1	2	3	4	1	2	3	4
a) A	B	C	D	b) C	D	B	A
c) A	C	B	D	d) C	D	A	B
- 4) Virus free plants are developed from  
a) cell suspension culture                      b) organ culture  
c) Meristem culture                      d) Protoplast culture
- 5) For the given statements with respect to Eichhornia select the suitable answer.  

**Statement A :** It drains of oxygen from water and is seen growing in standing water.

**Statement B :** It is an indogenous species of our country.

  - a) Statement A is correct and statement B is wrong.
  - b) Both the statement A and B are correct.
  - c) Statement A is wrong and statement B is correct.
  - d) Both the statement A and B are wrong.
- 6) Which of the following is incorrectly paired?  

a) Wheat	-	Himgiri
b) Milch breed	-	Sahiwal
c) Rice	-	Ratna
d) Pusa komal	-	Brassica

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- 7) Tectona grandis is coming under the following
- |                     |              |
|---------------------|--------------|
| a) Dipterocarpaceae | b) Lamiaceae |
| c) Ebenaceae        | d) Fabaceae  |
- 8) Pedogenesis refers to
- |               |           |         |          |
|---------------|-----------|---------|----------|
| a) Population | b) Fossil | c) Soil | d) Water |
|---------------|-----------|---------|----------|

**Section - II****Answer any four of the following:****4×2=8**

- 9) The endosperm of Angiosperm is different from Gymnosperm. Do you agree? Justify your answer.
- 10) What do you know about the word pBR 322?
- 11) What is CCS?
- 12) In 4 o'clock plant
- Pale green leaved plant (Male) × Dark green leaved plant (Female)

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[?]

Explain the type of inheritance.

- 13) Write the Botanical name and family of Nilavembu. Write any one of its uses.
- 14) What is called phytoremediation?

**Section - III****Answer any three of the following. Question No. 19 is compulsory:****3×3=9**

- 15) What is polyembryony? Write its uses.
- 16) What is gene mapping? Mention its uses.
- 17) What is Green House Effect? Draw the relative contributions of green house gases.
- 18) Define Heterosis.
- 19) How are artificial seeds produced?

**Section - IV****Answer the following questions:****2×5=10**

- 20) a) What are the King and Queen of spices? Write their uses.
- (OR)
- b) Water is essential for life. State the reason. Write any four features for plants which enable them to survive in water scarcity environment.
- 21) a) Discuss the steps involved in Microsporogenesis.
- (OR)
- b) Write the applications of plant tissue culture.



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## PART - II [BIO-ZOOLOGY]

Marks: 35

## Section - 1

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 glandular accessory organ which produces the largest proportion of semen is
  - a) Seminal vesicle
  - b) Bulbourethral gland
  - c) Prostate gland
  - d) Mucous gland
- 2) Haemophilia is more common in males because it is a
  - a) Recessive character carried by Y chromosome
  - b) Dominant character carried by Y chromosome
  - c) Dominant trait carried by X chromosome
  - d) Recessive trait carried by X chromosome
- 3) Which of the following is the correct sequence of event with reference to the central dogma?
  - a) Transcription, Translation, Replication
  - b) Transcription, Replication, Translation
  - c) Duplication, Translation, Transcription
  - d) Replication, Transcription, Translation
- 4) The difference between DNA sugars and RNA sugars is
  - a) One oxygen atom excess in deoxyribose sugars
  - b) One oxygen atom less in ribose sugars
  - c) Two oxygen atoms less in ribose sugars
  - d) One oxygen atom less in deoxyribose sugars
- 5) In the E waste generated by the mobilephones. Which among the following metal is most abundant?
  - a) Gold
  - b) Copper
  - c) Silver
  - d) Palladium
- 6) **Assertion (A) :** XX - XO type of sex determination is seen in bed bugs, cockroaches and grasshoppers.  
**Reason (R) :** The sex of offspring depends upon the sperm that fertilizes the egg.
  - a) Both (A) and (R) are true and (R) is not the correct explanation for (A).
  - b) Both (A) and (R) are false.
  - c) (A) is true and (R) is false.
  - d) Both (A) and (R) are true and (R) is the correct explanation for (A).
- 7)  $\beta$  cells that produce and release large amounts of antibody is called
  - a) Killer cells
  - b) Memory cells
  - c) Basophils
  - d) Plasma cells
- 8) Competition between species leads to
  - a) Extinction
  - b) Mutation
  - c) Amensalism
  - d) Symbiosis

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**Section - 2****Note: Answer any four of the following questions.****4×2=8**

- 9) What is the composition of semen?
- 10) What is Karyotyping?
- 11) Write any two application of DNA finger printing technology.
- 12) Write a notes on connecting links with example.
- 13) What is Bioremediation?
- 14) Write the important and potential application of human stem cells.

**Section - 3****Note: Answer any three of the following questions.****3×3=9****Question number 19 is compulsory.**

- 15) What is regeneration? Explain its types.
- 16) Write about gene banks.
- 17) Name the hormone secreted by thymus gland and mention two functions of the hormone.
- 18) Write the difference between Primary Immune response and Secondary Immune response.
- 19) How does chemical mediation act as physiological barrier?

**Section - 4****Note: Answer the following questions.****2×5=10**

- 20) Mention the advantages and disadvantages of cloning.

**(OR)**

Give an account of modern synthetic theory.

- 21) Write the salient features of Human genome project.

**(OR)**

Write a detailed note on various types of natural methods of contraception.

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