

HTV
XII - Std

HALF YEARLY EXAMINATION - 2022

BIOLOGY

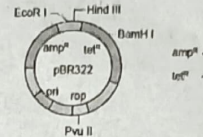
Time: 3.00 Hrs

Marks : 70

PART - I (Bio-Botany) (35 marks) Section - I

Note : 1. Answer all the questions. 2. Choose the most appropriate answer from the given four alternative and write the option code and the corresponding answer :- 8 X 1 = 8

1. A plant called X possesses small flower with reduced perianth and versatile anther. The probable agent for pollination would be a) Water b) air c) butterflies d) beetles
2. A protoplast is a cell
a) undergoing division b) without cell wall c) without plasma membrane d) without nucleus
3. The figure below is the diagrammatic representation of the vector pBR 322. Which one of the given options correctly identifies its certain components.



- a) Ori - original restriction enzyme
b) rop - reduced osmotic pressure
c) Hind III, EcoRI - selectable markers
d) amp^R, tet^R - antibiotic resistance genes

4. Column - I represent the size of the soil particles and Column II represents type of soil components. Which of the following is correct match for the Column I and Column II.

Column - I

- I. 0.2 to 2.00 mm
- II. Less than 0.002mm
- III. 0.002 to 0.02mm
- IV. 0.002 to 0.2 mm

Column - II

- i) Silt soil
- ii) Clayey soil
- iii) Sandy soil
- iv) Loamy soil

5. a) I-ii, II-iii, III-iv IV-i b) I-iv II-i III-iii IV-ii c) I-iii II-i III-iii IV-iv d) None of the above
6. Which one is in descending order of a food chain.
a) Producers → Secondary → Consumers → Primary Consumers → Tertiary Consumers
b) Tertiary Consumers → Primary Consumers → Secondary Consumers → Producers
c) Tertiary consumers → Secondary Consumers → Primary consumers → Producer
d) Tertiary consumers → Producers → Primary consumers → Secondary consumers

With respect of Eichhornia

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

Statement B : It is an indigenous species of our country.

- a) Statement A is correct and Statement B is wrong
- b) Both Statement A and B are correct
- c) Statement A is correct and Statement B is wrong
- d) Both statements A and B are wrong
7. Importing better varieties and plants from outside and acclimatizing them to local environment is called
a) cloning b) heterosis c) selection d) introduction
8. The active principle trans - tetra hydro canabial is present in
a) Opium b) Curcuma c) Marijuana d) Andrographis

Section - II

Note : Answer any four of the following questions :-

4 X 2 = 8

9. Draw the structure of T.S. of mature anther and label its parts.
10. Define : Bioremediation.
11. Write a note on cryopreservation.
12. Of the total sunlight, only 2 - 10% of the solar energy is used by green plants for photosynthesis explain why?
13. What is heterosis?
14. Give definitions for organic farming?

Section - III

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

3 X 3 = 9

15. Bring out the different steps involved in mechanism of crossing over.
16. List out the application of plant tissue culture.
17. Explain afforestation with case study.
18. Distinguish habitat and niche.
19. What are the objectives of plant breeding?

Section - IV

Note : Answer all the questions :

2 X 5 = 10

20. a) Give a detailed account on parthenocarpy. Add a note on its significance. (OR)
b) Explain about dihybrid cross.
21. a) What is single cell protein? Mention its application. (OR)
b) Various stages of succession are given below. From the rearrange them accordingly. Find out the type of succession and explain in detail.
Reed - swampstate, phytoplankton stage, shrub stage, submerged plant stage, forest stage, submerged free floating state, marsh meadow stage.

Bio - Zoology Section - I

Note : i. Answer all the questions. ii. Choose the given four alternatives and write the option code and the corresponding answer :-

8 X 1 = 8

1. The mode of reproduction in bacteria by
a) Formation of gametes b) Endospore formation c) Conjugation d) Zoospore formation
2. Mammalian egg is
a) Mesolecithal and non cleidoic b) Microlecithal and non cleidoic
c) Alecithal and non Cleidoic d) Alecithal and cleidoic
3. Patau syndrome is also referred to as
a) 13 - Trisomy b) 18 - Trisomy c) 21- Trisomy d) None of these
4. Which period was called age of fishes.
a) Permian b) Triassic c) Devonian d) Ordovician
5. The purpose of biological treatment of waste water is to
a) Reduce BOD b) Increase BOD c) Reduce sedimentation d) Increase sedimentation
6. Animals that can move from fresh water to sea called as
a) Stenothermal b) Eurythermal c) Catadromous d) Anadromous
7. In which year Indira Gandhi with life Sanctuary established
a) 1976 b) 1988 c) 1967 d) 1936
8. The Neanderthal man had the brain capacity of
a) 1400CC b) 650 - 800 CC c) 350 - 450 CC d) 1600CC

Section - II

Note : Answer any three of the following question.

4 X 2 = 8

9. Name an organism where cell division is itself a mode of reproduction.
10. Expand the following. a) ZIFT b) ICSI
11. Differentiate - Template strand and coding strand.
12. What are interferons? Mention their role.
13. Give the diagnostic - characters feature of a Biome?
14. How can we control entrophication?

Section - III

Note : Answer any three of the following question. Q.No. 19 is compulsory :-

3 X 3 = 9

15. Draw and label Human Sperm?
16. Who disproved Lamarck's theory of acquired characters? How?
17. Explain how ADA deficiency can be corrected?
18. Tabulate and analysis of two species population interaction.
19. Write notes on the following. a) Entrophication b) Algal Bloom.

Section - IV

Note : Answer the following questions :-

2 X 5 = 10

20. a) Give a schematic representation of spermatogenesis and Oogenesis in human.
(OR)
b) How does Hardy - Weinberg's expression ($p^2 + 2pq + q^2 = 1$) explain that genetic equilibrium maintained in a population? List any four factor that can disturb the genetic equilibrium.
21. a) Mention the advantages and disadvantages of cloning?
(OR)
b) How does recycling help reduce pollution?