

HALF YEARLY EXAMINATION - 2024

CLASS: XII

BIOLOGY

Reg.No.

MAX MARKS : 70

Time : 3.00 Hours

BIO-BOTANY

MARKS : 35

SECTION - I

I Choose the correct answer:

8X1=8

1. Restriction enzymes are
 - a) Not always required in genetic engineering
 - b) Essential tools in genetic engineering
 - c) Nucleases that cleave DNA at specific sites
 - d) Both (b) and (c)
2. Find out which one of the following is a wrong pair?
 - a) Total stem parasite - Cuscuta
 - b) Total root parasite - Orobanche
 - c) Partial stem parasite - Balanophora
 - d) Partial root parasite - Santalum
3. Statement A : Coffee contains caffeine.
Statement B : Drinking coffee enhances cancer.
 - a) A is correct, B is wrong
 - b) A and B both are correct
 - c) A is wrong, B is correct
 - d) A and B both are wrong
4. Pick out the odd pair
 - a) Mass selection - Morphological character
 - b) Pure line selection - Repeated self pollination
 - c) Clonal selection - Sexually propagated
 - d) Natural selection - Involves nature
5. Match the following
 - A. Protandry - (i) Primula
 - B. Tristyly - (ii) Clerodendrum
 - C. Protogyny - (iii) Lythrum
 - D. Distily - (iv) Aristolochia bracteata
 - a) A - (ii) B - (iii) C - (iv) D - (i)
 - b) A - (iii) B - (ii) C - (i) D - (iv)
 - c) A - (iv) B - (i) C - (ii) D - (iii)
 - d) A - (ii) B - (iv) C - (iii) D - (i)
6. Coleorhiza is found in
 - a) Bean
 - b) Tridax
 - c) Paddy
 - d) Pea
7. Which one of the following is an example of Polygenic inheritance ?
 - a) Flower colour in *Mirabilis jalapa*
 - b) Production of male honey bee
 - c) Pod shape in garden pea
 - d) Skin colour in human
8. Consider the following statement (s)
 - i) Sutton and Boveri jointly proposed the chromosome theory of inheritance.
 - ii) Zygotes consists of two different sets of chromosomes.
 - iii) Mutation and recombination are the two major processes responsible for genetic variation.
 - iv) Mutations affecting single base or base pair of DNA are called point mutation.
 - a) (i) and (ii) are correct
 - b) (ii) and (iv) are correct
 - c) (ii) and (iii) are correct
 - d) (iii) and (iv) are correct

SECTION - II

II Answer any Four questions:

4X2=8

9. What is called Stomium ?
10. Name the chemicals used in gene transfer
11. What is a cybrid?
12. How does an orchid Ophrys ensures its pollination by bees?
13. Define-Plant breeding.
14. Name the humors that are responsible for the health of human beings.

SECTION - III

III Answer any Three of the following. Q.No.19 is compulsory

3X3=9

15. What is polyembryony? How it can commercially exploited?
16. What are the reasons for Mendel's successes in his breeding experiments?
17. Write the advantages of herbicide tolerant crops
18. Give an accounts on cryopreservation.
19. Write the objectives of plant breeding.

SECTION - IV

IV Answer all the questions.

2X5=10

20. Describe the events of fertilization of an angiospermic plant. (OR)
What is soil profile? Explain the different characteristics of soil horizons.
21. Write the differences between primary succession and secondary succession. (OR)
What are the king and Queen of spices? Explain about them and their uses.

SECTION - I**I Choose the correct answer:****8x1=8**

1. The mode of reproduction is bacteria by
a) Conjugation b) Formation of gametes c) Zoospore formation d) Endospore formation
2. Which one of the following is a causative agent for Genital warts
a) Herpes simplex virus b) Human papilloma virus
c) Hepatitis B virus d) Human immunodeficiency virus
3. Klinefelter's syndrome is characterized by
a) XYY b) XO c) XXX d) XXY
4. Which of the following codon is code for methionine
a) UUU b) AUG c) AUC d) UAA
5. Modern man belongs to which period?
a) Quaternary b) Cretaceous c) Silurian d) Cambrian
6. Cirrhosis of liver is caused by chronic intake of
a) Opium b) Alcohol c) Tobacco d) Cocaine
7. Competition between species leads to
a) Amensalism b) Extinction c) Symbiosis d) Mutation
8. The thickness of stratospheric ozone layer is measured in /on
a) Sieverts units b) Dobson units c) Melson units d) Beaufort scale

SECTION - II**II Answer any 4 questions.****4X2=8**

9. How is polyspermy is avoided in humans?
10. What is surrogacy?
11. What are holandric genes?
12. Mention any two main objections to Darwinism
13. When does antibiotic resistance develop?
14. Differentiate positive phototropism and negative phototropism

SECTION - III**III Answer any 3 questions. Question No.19 is compulsory.****3x3=9**

15. Draw and label the parts of human ovum.
16. State any three goals of human genome project
17. Differentiate between somatic cell gene therapy and germ line gene therapy
18. What are eight categories of species in Red list?
19. A character present in grandmother goes to granddaughter through son. Draw a flowchart for this pattern of inheritance

SECTION - IV**IV Answer all the questions.****2X5=10**

20. Explain the different kinds of syngamy in living organisms. (OR)
Explain stabilizing, directional and disruptive selection with examples
21. Differentiate active immunity and passive immunity. (OR)
Write about the effects of chemicals used in the field of agriculture.