

12

Second Revision Examination - 2024

Marks : 70

Time : 3.00 Hrs.

BIOLOGY
BIO – BOTANY

8 x 1 = 8

I. Choose the correct answer

1. Tectona grandis is coming under the family
a) Lamiaceae b) Fabaceae c) Dipterocarpaceae d) Ebenaceae
2. One green house gas contributes to 60% of total global warming and another contributes to 20%. These gases are respectively
a) CO₂ and CH₄ b) CFC and N₂O c) CH₄ and CO₂ d) CH₄ and CFC
3. A free living nitrogen fixing cyanobacterium which can form symbiotic association with water fern Azolla
a) Nostoc b) Anabaena c) Chlorella d) Rhizobium
4. EcoRI cleaves DNA at
a) AGGTT b) GTATAC c) GAATTC d) TATAGC
5. Changing the codon from AGC to AGA represents
a) Missense mutation b) Non – sense mutation c) Frameshift mutation
d) Deletion mutation
6. Coleorhizae is found in
a) Paddy b) Bean c) Pea d) Tridax
7. Three linked genes X, Y and Z are on chromosome. If the percentage crossing over between X and Y is 20, Y and Z is 28. and X and Z is 8, then the order in which these genes are arranged on the chromosome is
a) XYZ b) YXZ c) XZY d) ZYX
8. How many gametes are produced by a plant with the genotype AaBbCcDdEE?
a) 4 b) 8 c) 12 d) 16

II. Answer any four of the following.

4 x 2 = 8

9. What is heterosis? Who introduced the term heterosis.
10. Write the economic importance of rice.
11. Pyramid of energy is always upright. Give reasons.
12. How is anemochory different from Zoochory?
13. What are the materials used to grow Spirulina.
14. How is Transition different from Transversion?

III. Answer any three of the following. Qn. No. 19 is compulsory

3 x 3 = 9

15. Write the significance of pollination.
16. Write down the significance of ploidy.
17. What is bioremediation? Give any one example of bioremediation.
18. Give an account of cryopreservation?
19. What are halophytes? Write about vivipary and pneumatophores.

IV. Answer all the questions.

2 x 5 = 10

20. Give a concise account on steps involved the fertilization of an angiospermic plant. (OR)
List the basic concepts involved in plant tissue culture? Write the various steps involved in cell suspension culture.
21. Write any five effects of deforestation. How is deforestation related with global warming? (OR)
What is plant introduction? Give an example. Distinguish Primary Introduction from Secondary Introduction.

BIO - ZOOLOGY

I. Choose the correct answer

8 x 1 = 8

1. The total number of non-sense codons are a) 1 b) 2 c) 3 d) 4
2. Ovulation happens on which day of the menstrual cycle?
a) 12th day b) 14th day c) 16th day d) 18th day
3. The oral contraceptive pill developed by CDRI, Lucknow is
a) Nova T b) LNG 20 c) Snehidi d) Saheli
4. In a family, the father is normal and the mother is colourblind. The percentage of colourblind sons to this father and mother is a) 25% b) 50% c) 75% d) 100%
5. Germplasm Theory was proposed by?
a) Darwin b) Welsmann c) Lamarck d) Wallace
6. Cirrhosis of liver is caused by chronic intake of _____.
a) Opium b) Tobacco c) Alcohol d) Cocaine
7. PCR proceeds in three distinct steps governed by temperature. These steps are in order of
a) Denaturation, Annealing, Separation b) Denaturation, Annealing, Synthesis
c) Annealing, Synthesis, Denaturation d) Annealing, Denaturation, Synthesis
8. In which mode of reproduction, variations are seen?
a) Asexual b) Parthenogenesis c) Sexual d) Both A and B.

II. Answer any four of the following

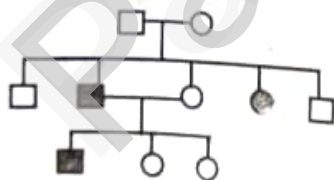
4 x 2 = 8

9. How many hot spots are there in India? Name them.
10. Distinguish Active Immunity from Passive Immunity.
11. Differentiate Natality from Mortality.
12. Differentiation foeticide and infanticide.
13. What is haplodiploidy? Give one example.
14. Expand FSH, LH, ADA, HIV

III. Answer any three of the following. Qn. No. 19 is compulsory

3 x 3 = 9

15. What is syngamy. List any four types of syngamy.
16. State any three goals of HGP.
17. Draw the diagrammatic representation of Immunoglobulin. Label the parts.
18. What is Ideonella sakaiensis? What is its role in bioremediation?
19. Study the given pedigree chart and identify the genetic disease. How is the disease caused? Are males and females equally affected in this disease? Give reasons.



IV. Answer all the questions

2 x 5 = 10

20. Give a schematic representation of spermatogenesis and oogenesis in humans. Explain the formation of nucleosome. (OR)
21. List the causative agent, mode of transmission and symptoms of Diphtheria and Typhoid. (OR) What is Hardy - Weinberg Equilibrium? Explain how mutation, natural selection and genetic drift affect Hardy Weinberg Equilibrium.