



BOARD QUESTION PAPER : MARCH 2024

BIOLOGY

Time: 3 Hrs.

Max. Marks: 70

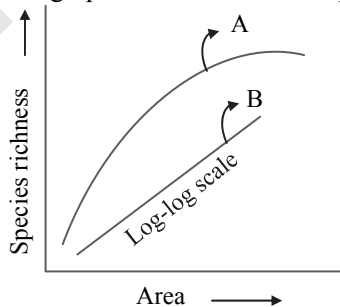
General Instructions:

The question paper is divided into **four** sections.

- (1) **Section A:** Q. No. 1 contains **Ten multiple choice** type of questions carrying **one** mark each. Evaluation will be done for the **first attempt** only.
Q. No. 2 contains **Eight very short answer** type of questions carrying **one** mark each.
- (2) **Section B:** Q. No. 3 to 14 are **short answer** type of questions carrying **two** marks each. (Attempt **any Eight**)
- (3) **Section C:** Q. No. 15 to 26 are **short answer** type of questions carrying **three** marks each. (Attempt **any Eight**)
- (4) **Section D:** Q. No. 27 to 31 are **long answer** type of questions carrying **four** marks each. (Attempt **any Three**)
- (5) Begin the answer of each section on a new page.

SECTION – A**Q.1. Select and write the correct answer for the following multiple choice type of questions: [10]**

- i. Identify the growth hormone in plants which causes inhibitory effect.
(A) Cytokinins (B) Abscisic acid (C) Gibberellin (D) Ethylene
- ii. Which one of the following is not a part of *lac* operon?
(A) Promoter (B) Regulator (C) Inducer (D) Operator
- iii. In absence of fertilization, corpus luteum degenerates into _____.
(A) tunica albuginea (B) membrana granulosa
(C) zona pellucida (D) corpus albicans
- iv. Which of the following divides nasal cavity?
(A) Hyaline cartilage (B) Mesethmoid cartilage
(C) Ligamentum arteriosum (D) Laryngopharynx
- v. Which of the following is caused by unsterilized needle?
(A) Elephantiasis (B) AIDS (C) Malaria (D) Dengue
- vi. Recognition sequence of restriction enzymes are generally _____ nucleotides long.
(A) 2 to 4 (B) 4 to 8 (C) 8 to 10 (D) 14 to 18
- vii. Which of the following types require pollinator but result is genetically similar to autogamy?
(A) Geitonogamy (B) Xenogamy (C) Apogamy (D) Cleistogamy
- viii. Which one of the following does not evolve further?
(A) Climax community (B) Primary succession
(C) Pioneer species (D) Seral community
- ix. Identify the appropriate term for the number of births under ideal conditions:
(A) Absolute mortality (B) Realized natality
(C) Realized mortality (D) Absolute natality
- x. Observe the graph and select correct option:



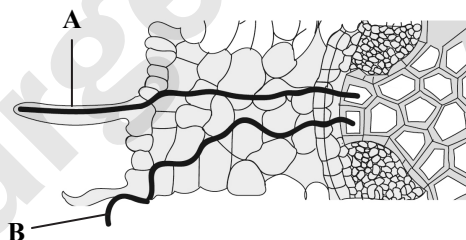
- (A) Line 'A' represent $S-CA^2$
- (B) Line 'B' represents $\log C = \log A + Z \log S$
- (C) Line 'A' represents $S = CA^Z$
- (D) Line 'B' represent $\log S = \log Z + C \log A$

**Q.2. Answer the following questions:****[8]**

- i. What are vestigial organs?
- ii. Expand the term ZIFT.
- iii. Give the name of endocrine gland which is prominent at birth but gets gradually atrophied in adult stage.
- iv. What is the full form of IAA?
- v. Give the name of microbial source of antibiotic chloromycetin.
- vi. Which cells of islets of Langerhans produce a hormone insulin?
- vii. How many meiotic divisions are required for the formation of 300 seeds in angiosperm?
- viii. Explain the term Emigration.

SECTION – B**Attempt any EIGHT of the following questions:****[16]**

- Q.3.** What are the reasons for the success of Mendel?
- Q.4.** Arrange the following steps of DNA fingerprinting in correct sequence :
 - i. Gel electrophoresis
 - ii. Isolation of DNA
 - iii. Southern blotting
 - iv. Restriction digestion
- Q.5.** Distinguish between human sperm and ovum.
- Q.6.** Enlist the uses of gene therapy.
- Q.7.** Define the following terms:
 - i. Gene flow
 - ii. Chromosomal aberrations
- Q.8.** What are the significances of double fertilization?
- Q.9.** Identify and define 'A' and 'B' in relation to uptake of water by the root:



- Q.10.** Describe mutualism.
- Q.11.** Explain the factors affecting water absorption.
- Q.12.** What is differentiation and redifferentiation?
- Q.13.** Select and rewrite appropriate disorder of respiratory system with the given symptoms: [sinusitis, emphysema, silicosis and asbestosis, laryngitis]
 - i. Breakdown of alveoli, shortness of breath.
 - ii. Inflammation of the sinuses, mucous discharge.
 - ii. Inflammation of larynx, vocal cord, sore throat, hoarseness of voice, mucous build up and cough.
- Q.14.** Explain the steps involved in preliminary treatment of sewage.



SECTION – C

Attempt any EIGHT of the following questions:

[24]

- Q.15. Give the different steps involved in formation of m-RNA from hn-RNA.
- Q.16. What is reproductive isolation? Describe any two types each of pre-mating and post-mating isolating mechanism.
- Q.17. Explain unique features of acquired immunity.
- Q.18. Name and describe hormones secreted by ovaries.
- Q.19. Explain different steps involved in PCR technique.
- Q.20.



A

B

C

Identify A, B and C from the above diagrams and give their functions.

- Q.21. What are the limitations of root pressure theory?
- Q.22. Explain green house effect with reference to gases responsible for it and their sources.
- Q.23. Describe physiological effects and applications of ethylene.
- Q.24. Give the name and type of I, IV and VII cranial nerves.
- Q.25. Describe pyramid of energy with the help of diagram.
- Q.26. What is lac? Enlist economic importance of lac.

SECTION – D

Attempt any THREE of the following questions:

[12]

- Q.27. Describe histological structure of Testis with well labelled diagram.
- Q.28. What are chromosomal disorders? Describe Turner's syndrome and Klinefelter's syndrome.
- Q.29. Describe nervous system in *Planaria* with well labelled diagram.
- Q.30. Explain following terms:
i. Grafting
ii. Apomixis
iii. Polyembryony
iv. Pathenocarpy
- Q.31. Interpret the given diagrams A and B. Enlist the changes occurring during inspiration and expiration.

