

SECTION - A

Q. 1. Select the correct alternatives and write the answers :

- (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 albugenia (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 generally similar to autogamy?

- (a) Geitonogamy (b) Xenogamy
(c) Apogamy (d) Cleistogamy

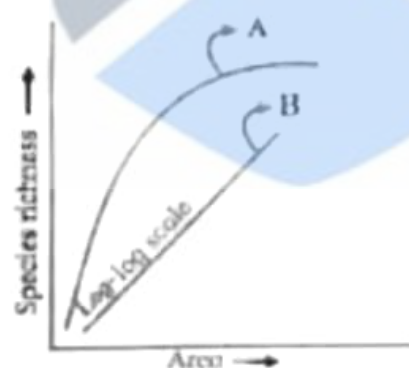
(viii) Which one of the following does not evolve further?

- (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' represents $S = CA^2$
(b) Line 'B' represents $\log C = \log A + Z \log S$
(c) Line A represents $S = CA^Z$
(d) Line B represents $\log S = \log Z + C \log A$

- (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 :

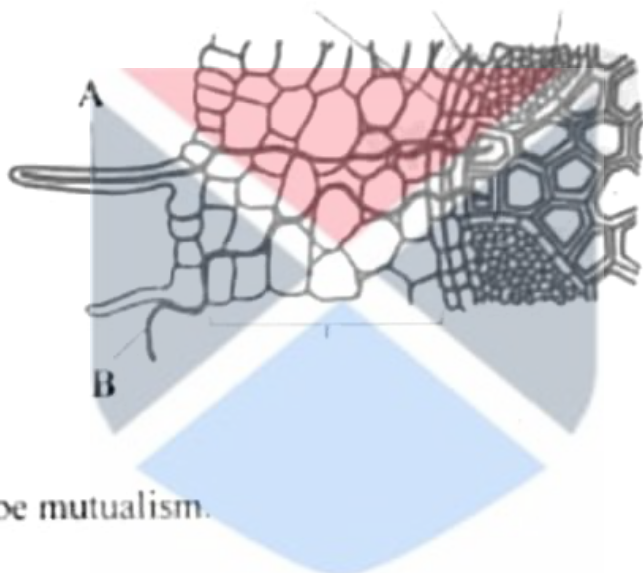
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Q. 3. What are the reasons for the success of Mendel?

Q. 4. Arrange the following steps of DNA fingerprinting in correct sequence :

- (a) Gel electrophoresis
- (b) Isolation of DNA
- (c) Southern blotting
- (d) Restriction digestion

- Q. 5. Distinguish between human sperm and ovum.
- Q. 6. Enlist the uses of gene therapy.
- Q. 7. Define the following terms :
- Gene flow
 - 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 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]
- Breakdown of alveoli, shortness of breath.
 - Inflammation of the sinuses, mucous discharge.

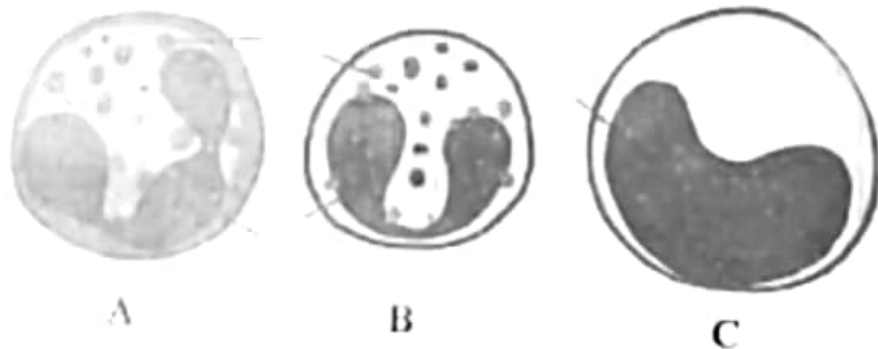
- (c) Inflammation of larynx, vocal cord, sore throat, hoarseness of voice, mucous build up and cough.
- (d) Inflammation of fibrosis, lung damage.

Q. 14. Explain the steps involved in preliminary treatment of sewage.

SECTION – C

Attempt any EIGHT of the following questions :

- 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.



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.

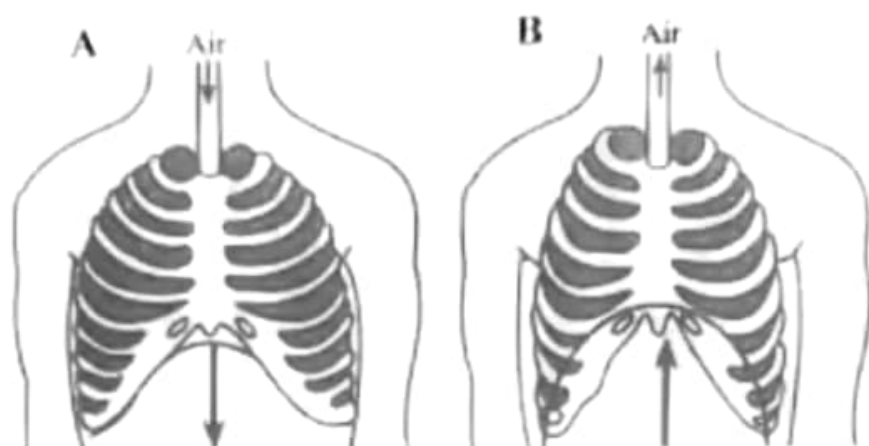
SECTION – D

Attempt any **THREE** of the following questions :

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- 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 :
- (a) Grafting
 - (b) Apomixis
 - (c) Polyembryony
 - (d) Parthenocarpy

Q. 31. Interpret the given diagrams A and B. Enlist the changes occurring during inspiration and expiration.



Q. 32. 13