

MH 12 BIOLOGY Question

Time Allowed :3 Hours	Maximum Marks :70	Total questions :31
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General Instructions

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1. Section A:

(a) Q. No. 1 contains Ten multiple choice type of questions carrying one mark each. Evaluation will be done for the first attempt only.

(b) 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 the correct alternatives and write the answers :

(i) Identify the growth hormone in plants which causes inhibitory effect.

- (A) Cytokinins
 - (B) Absciscic acid
 - (C) Gibberellin
 - (D) Ethylene
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(ii) Which one of the following is not a part of lac operon?

- (A) Promoter
 - (B) Regulator
 - (C) Inducer
 - (D) Operator
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(iii) In absence of fertilization, corpus luteum degenerates into

- (A) tunica albugenia
 - (B) membrana granulosa
 - (C) zona pellucida
 - (D) corpus albicans
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(iv) Which of the following divides nasal cavity?

- (A) Hyaline cartilage
 - (B) Mesethmoid cartilage
 - (C) Ligamentum arteriosum
 - (D) Laryngopharynx
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(v) Which of the following is caused by unsterilized needle?

- (A) Elephantiasis

- (B) AIDS
 - (C) Malaria
 - (D) Dengue
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(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
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(vii) Which of the following types require pollinator but result is genetically similar to autogamy?

- (A) Geitonogamy
 - (B) Xenogamy
 - (C) Apogamy
 - (D) Cleistogamy
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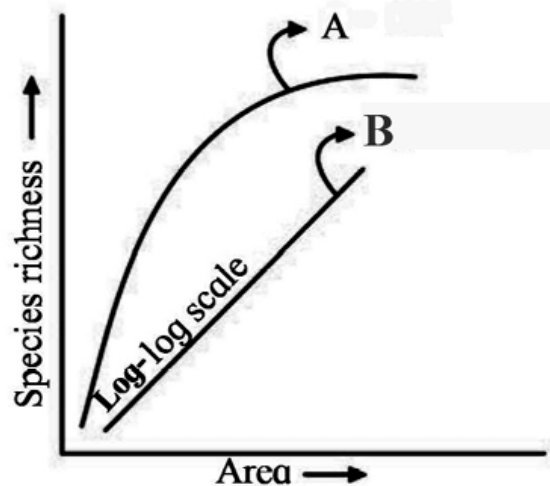
(viii) Which one of the following does not evolve further?

- (A) Climax community
 - (B) Primary Succession
 - (C) Pioneer Species
 - (D) Seral Community
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(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 $\log S = \log Z + C \log A$

Q. 2. Answer the following questions :

(i) What are vestigial organs?

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

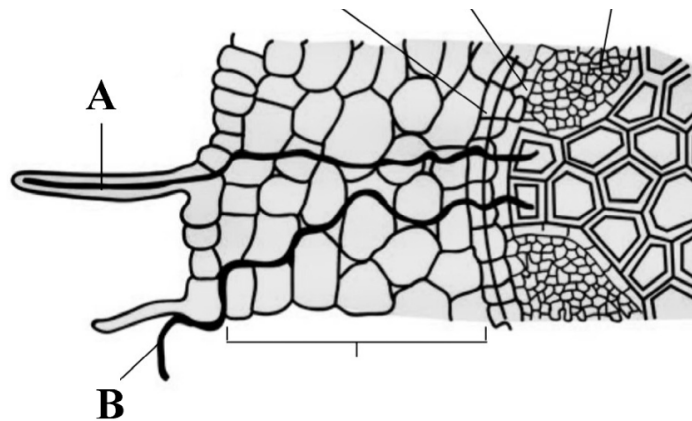
Q. 5. Distinguish between human sperm and ovum.

Q. 6. Enlist the uses of gene therapy.

Q. 7. Define the following terms : (a) Gene flow (b) 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]

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.

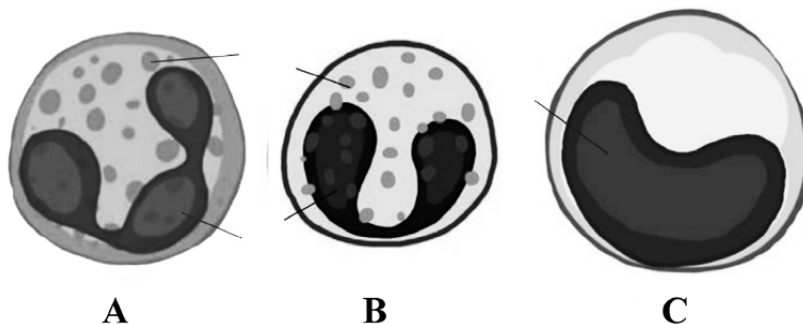
Q. 16. What is reproductive isolation? Describe any two types each of pre-mating and post-mating isolating mechanism.

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 :

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.

