

## MH 12 BIOLOGY Question

<b>Time Allowed :3 Hours</b>	<b>Maximum Marks :70</b>	<b>Total questions :31</b>
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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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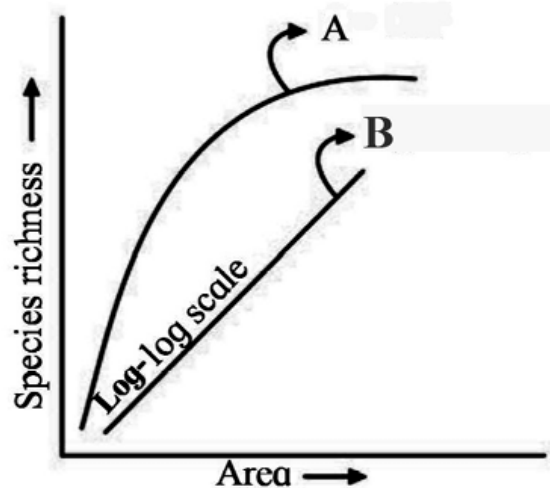
**(viii) Which one of the following does not evolve further?**

- (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
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**(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.**

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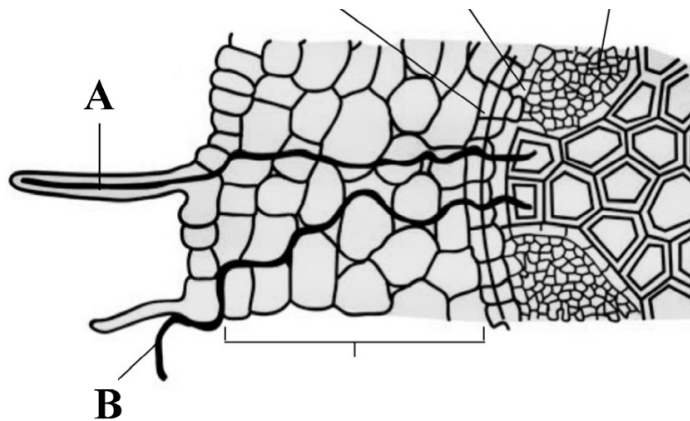
**Q. 7. Define the following terms : (a) Gene flow (b) Chromosomal aberrations**

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**Q. 8. What are the significances of double fertilization?**

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**Q. 9. Identify and define 'A' and 'B' in relation to uptake of water by the root :**



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**Q. 10. Describe mutualism.**

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**Q. 11. Explain factors affecting water absorption.**

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**Q. 12. What is differentiation and redifferentiation?**

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**Q. 13. Select and rewrite appropriate disorder of respiratory system with the given symptoms : [ sinusitis, emphysema, silicosis and asbestosis, laryngitis ]**

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

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**SECTION – C**

Attempt any *EIGHT* of the following questions :

**Q. 15. Give the different steps involved in formation of m-RNA from hn-RNA.**

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

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**Q. 17. Explain unique features of acquired immunity.**

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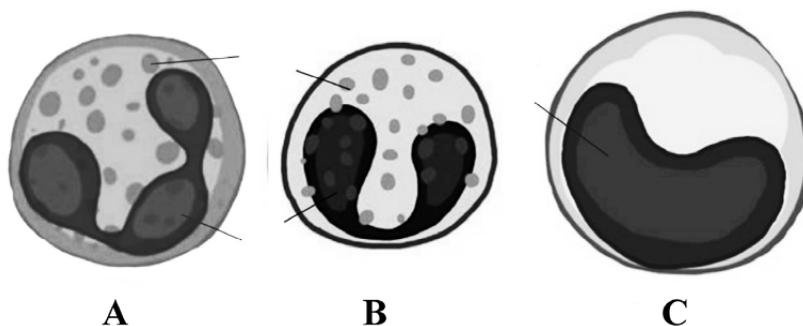
**Q. 18. Name and describe hormones secreted by ovaries.**

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**Q. 19. Explain different steps involved in PCR technique.**

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**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?**

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**Q. 22. Explain green house effect with reference to gases responsible for it and their sources.**

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**Q. 23. Describe physiological effects and applications of ethylene.**

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**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.**

