MAHARASHTRA BOARD · CLASS 12 · BIOLOGY

Maharashtra Board Class 12 Biology Important Questions 2027

30 question patterns that repeated across past papers · the years show every time each was asked

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Reproduction in Lower and Higher Plants

1. Endosperm and its types

Asked 2× · Board 2025, Board 2026 · 4 marks

Explain nuclear and helobial type of endosperm with suitable examples.

2. Meiotic divisions calculation

Asked 2× · Board 2024, Board 2026 · 1 marks

How many meiotic divisions are required to produce 80 male gametes in Angiosperms?

3. Define reproduction terms (apomixis, polyembryony, parthenocarpy)

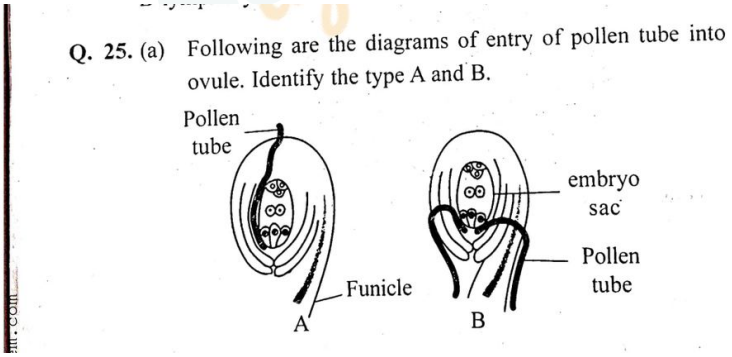
Asked 2× · Board 2024, Board 2026 · 3/4 marks

Define : (a) Siphonogamy (b) Parthenocarpy (c) Polyembryony

4. Significance of double fertilisation

Asked 2× · Board 2023, Board 2024 · 2/3 marks

(a) Following are the diagrams of entry of pollen tube into ovule. Identify the type A and B. [diagrams of pollen tube entry into ovule] (b) Give any four points of significance of double fertilization.



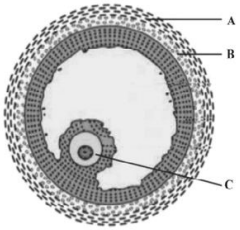
Reproduction in Lower and Higher Animals

5. Graafian follicle diagram

Asked 2× · Board 2025, Board 2026 · 2/3 marks

Identify A, B and C from the given diagram of Graafian follicle and mention their significance : [diagram of Graafian follicle]

and mention their significance :



6. Structure of human sperm

Asked 2× · Board 2025, Board 2026 · 4 marks

With the help of labelled diagram describe the structure of human sperm.

Inheritance and Variation

7. Down syndrome (trisomy 21)

Asked 2× · Board 2024, Board 2025 · 2/3 marks

Mention any six symptoms of disorder caused by trisomy of 21st chromosome.

Molecular Basis of Inheritance

8. Processing of hnRNA to mRNA

Asked 2× · Board 2024, Board 2025 · 3/4 marks

Describe the transcription and processing of hnRNA to mRNA in Eukaryotes.

Origin and Evolution of Life

9. Archaeopteryx as connecting link

Asked 2× · Board 2023, Board 2026 · 3 marks

Write any three characters each of Archaeopteryx showing Reptilian and Avian features.

Plant Water Relation

10. Root hair structure diagram

Asked 3× · Board 2023, Board 2025, Board 2026 · 2/3 marks

With the help of a labelled diagram, describe the structure of root-hair.

11. Radial and tangential translocation

Asked 2× · Board 2024, Board 2026 · 1/2 marks

When food is translocated from phloem to pith, it is called _____ translocation. (a) radial (b) tangential (c) upward (d) downward

12. Mechanism of stomatal opening and closing

Asked 2× · Board 2024, Board 2026 · 3/4 marks

What is transpiration? Explain stomatal opening and closing mechanism with reference to starch-sugar interconversion theory.

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13. Factors affecting water absorption

Asked 2× · Board 2024, Board 2026 · 2 marks

Mention any four factors affecting water absorption.

14. Imbibition

Asked 2× · Board 2023, Board 2025 · 1/2 marks

Name the process in which swelling of hydrophilic colloids occur due to adsorption of water.

Plant Growth and Mineral Nutrition

15. Deficiency symptoms of mineral elements

Asked 2× · Board 2025, Board 2026 · 3 marks

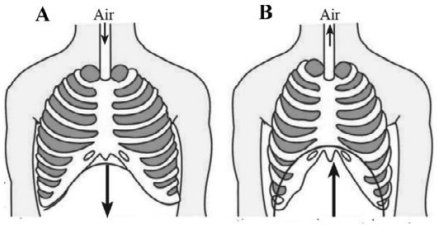
(a) Enlist any four mineral deficiency symptoms seen in plants. (b) Give the function of molybdenum as mineral nutrient.

Respiration and Circulation

16. Inspiration vs expiration

Asked 3× · Board 2024, Board 2025, Board 2026 · 2/3/4 marks

Interpret the given diagrams A and B. Enlist the changes occuring during inspiration and expiration. [diagrams A and B of breathing mechanism]



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17. Valves of the human heart

Asked 2× · Board 2025, Board 2026 · 3/4 marks

Give location and function of any four valves present in human heart.

18. Respiratory organs/surfaces of organisms

Asked 2× · Board 2024, Board 2026 · 2/3 marks

Match the respiratory surface to the organism in which it is found : Organisms: (1) Limulus (2) Protists (3) Tadpoles of frog (4) Fishes (5) Reptiles (6) Spiders. Respiratory surface/organs: (a) Lungs (b) Internal gills (c) Book lungs (d) External gills (e) Plasma membrane (f) Book gills (g) Cloaca.

19. Identify respiratory disorders from symptoms

Asked 2× · Board 2024, Board 2025 · 2 marks

Identify the disorders showing following symptoms : (a) Constriction of bronchioles, mucus build up in bronchioles, periodic wheezing, difficulty in breathing. (b) Inflammation of sinuses and mucous discharge.

Control and Coordination

20. Names and types of specified cranial nerves

Asked 2× · Board 2024, Board 2026 · 2/3 marks

Enlist the names of VI, VII, VIII and IX cranial nerves.

Human Health and Diseases

21. Typhoid - causative agent and details

Asked 2× · Board 2024, Board 2026 · 1/2 marks

Name the causative agent of typhoid.

Enhancement in Food Production

22. Composition and benefits of biogas

Asked 2× · Board 2023, Board 2026 · 3 marks

(a) Give the composition of biogas. (b) Enlist the benefits of biogas.

Biotechnology

23. Recombinant human proteins used to treat diseases

Asked 3× · Board 2023, Board 2025, Board 2026 · 2/3 marks

Match the following from Column-A and Column-B. Write the correct pairs. Column A: (i) Anaemia (ii) Atherosclerosis (iii) Parturition (iv) Blood clots (v) Cancer (vi) Diabetes. Column B: (1) Platelet derived growth factor (2) Relaxin (3) Insulin (4) Erythropoietin (5) Tissue plasminogen activator (TPA) (6) Interferons, tumour necrosis factor interleukins.

24. Steps of DNA fingerprinting/profiling

Asked 2× · Board 2024, Board 2026 · 2/4 marks

(a) What is DNA profiling? (b) Arrange the following steps of DNA profiling in correct sequence: (i) Selection of DNA probe (ii) Isolation of DNA (iii) Gel electrophoresis (iv) Hybridization (v) Southern blotting (vi) Restriction digestion

25. Uses of gene therapy

Asked 2× · Board 2024, Board 2025 · 2 marks

Enlist any four uses of gene therapy.

26. Polymerase chain reaction (PCR)

Asked 2× · Board 2023, Board 2024 · 3/4 marks

Explain different steps involved in PCR technique.

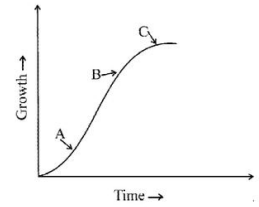
Organisms and Populations

27. Phases of population growth curve

Asked 2× · Board 2023, Board 2024 · 1 marks

[figure of population growth curve] Choose the correct name of phases A, B and C in the given figure : (a) Stationary, Log, Lag (b) Log, Lag, Stationary (c) Log, Stationary, Lag (d) Lag, Log, Stationary

given figure :



Ecosystems and Energy Flow

28. Steps of decomposition

Asked 3× · Board 2024, Board 2025, Board 2026 · 3 marks

Explain leaching, humification and mineralization as the steps of decomposition process.

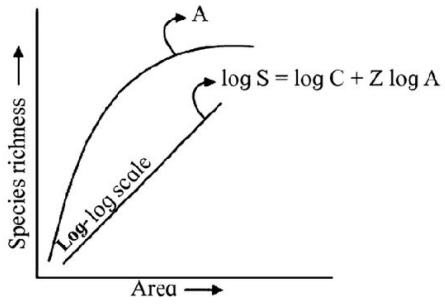
Biodiversity, Conservation and Environmental Issues

29. Species-area relationship graph

Asked 2× · Board 2024, Board 2025 · 1 marks

Identify 'A' from the graph given below showing species area relationship : [species-area relationship graph]

(v) Identify 'A' from the graph given below showing species area relationship :



30. Rivet Popper Hypothesis

Asked 2× · Board 2023, Board 2024 · 1 marks

Rivet Popper Hypothesis explains (a) loss of biodiversity (b) biomagnification (c) species area relationship (d) significance of diversity