



BIOLOGY

BOOKS - EVERGREEN BIOLOGY (ENGLISH)

SAMPLE PAPER 1

Questions Section I

1. DNA threads which appear inside the nucleus during cell division.

A. Spindle fibers

B. Centrioles

C. Asters

D. Chromosomes

Answer: D



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2. When an individual has both the genes of a contrasting characters, it is said to be:

A. Homozygous

B. Heterozygous

C. Phenotype

D. Genotype

Answer: B



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3. The leaves of certain plants exhibit droplets of water along their margins in the warm humid conditions.

A. Bleeding

B. Guttation

C. Transpiration

D. Evaporation

Answer: B



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4. The process of conversion of ADP into ATP during photosynthesis.

- A. Photolysis
- B. Polymerization
- C. Photophosphorylation
- D. None of these

Answer: C



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5. Phenomena responsible for rupturing coats of germinating seeds.

A. Osmosis

B. Diffusion

C. Assimilation

D. Imbibition

Answer: D



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6. Mitosis produces ____ daughter cells and meiosis produces ____ daughter cells.

A. 2,2

B. 2,4

C. 4,2

D. 4,4

Answer: B



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7. Genetics is the study of ____

A. development of organisms

B. mechanisms of inheritance

C. nuclear division

D. variation between species

Answer: B



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8. A normal human body contains _____ pairs of chromosomes and the numbers of sex chromosomes in a sex cell of a human being is _____

A. 44,22

B. 23,2

C. 23,22

D. 46,2

Answer: B



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9. Damage and errors in DNA cause _____

A. mutation

B. DNA repair

C. translation

D. transcription

Answer: A



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10. During photosynthesis, energy absorbed from sunlight is stored as chemical energy in _____ biomolecules.

A. ATP, ADP

B. ATP, NADPH

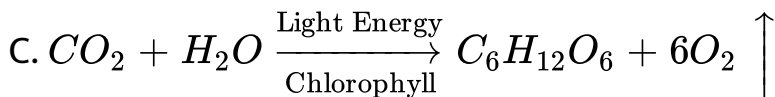
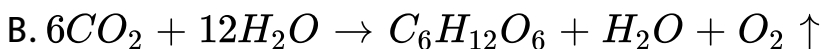
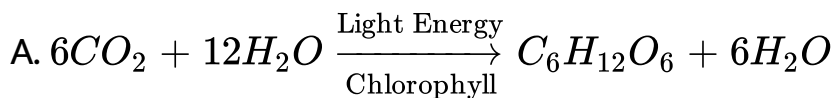
C. NAD, NADP

D. $NADH_2$, ATP

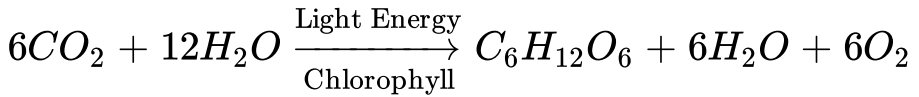
Answer: B

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11. Which of the following is the balanced chemical reaction of process photosynthesis?



D.



Answer: D

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12. The sequence of cell cycle is:

- A. S, M, G_1 and G_2
- B. G_1 , S, G_2 and M
- C. G_1 , G_2 , S and M
- D. M, G_1 , G_2 and S

Answer: B



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13. Rate of transpiration increases with:

A. Intensity of sunlight, high atmospheric CO_2 level,

high water content

B. Closure of stomata, high atmospheric CO_2 level,

velocity of wind

C. Intensity of sunlight, dry air, high water content

D. Opening of stomata, high atmospheric CO_2 level,

shedding of leaves

Answer: C



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14. The plants die due to wilting when:

- A. Available light is reduced to half
- B. Xylem is blocked
- C. Few roots are broken
- D. Phloem is blocked

Answer: B



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15. Which of the following is the logical sequence for the root showing the cell to cell conduction of water ?

A. Root hair → Endodermis → Soil water → Xylem
→ Cortex

B. Xylem → Cortex → Endodermis → Root hair
→ Soil water

C. Soil water → Root hairs → Cortex →
Endodermis → Xylem

D. Cortex → Endodermis → Xylem → Root hair
→ Soil water

Answer: C

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16. Explain the Alleles

- A. Alternate forms of genes
- B. Linked genes
- C. Chromosomes that have crossed over
- D. Homologous chromosomes

Answer: A



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17. Explain the Osmosis

- A. Movement of solute molecules through a semi-permeable membrane from region of their higher concentration to the lower concentration region.

B. Movement of solvent molecules through a semi-permeable membrane from region of their higher concentration to the lower concentration region.

C. Movement of solvent molecules through a semi-permeable membrane from region of their lower concentration to the higher concentration region

D. Movement of solute molecules through a semi-permeable membrane from region of their lower concentration to the higher concentration region.

Answer: B



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18. Explain the Chromatin

- A. A substance within a chromosome consisting of DNA and uncondensed protein.
- B. A long DNA molecule with part or all of the genetic material of an organism.
- C. A double helix, composed of repeating nucleotides join to other strands via hydrogen bonds.
- D. The point of attachment of two chromatid sisters.

Answer: A



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19. Explain the Phosphorylation

- A. Addition of phosphate to NADP to form NADPH.
- B. Addition of phosphate to adenosine diphosphate (ADP) to form adenosine triphosphate (ATP)
- C. Removal of phosphate from adenosine triphosphate (ATT) to form adenosine diphosphate (ADP)
- D. Removal of phosphate from NADP to form NADPH

Answer: A



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20. Explain the osmotic pressure

- A. Maximum pressure exerted to prevent the passage of pure solvent into the solution separated by a semi permeable membrane.
- B. Minimum pressure exerted to prevent the passage of pure solvent into the solution separated by a semi permeable membrane.
- C. Minimum pressure exerted to prevent the passage of pure solute into the solution separated by a semi permeable membrane.
- D. Maximum pressure exerted to prevent the passage of pure solute into the solution separated by a semi permeable membrane

Answer: B



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21. State the exact location of the Thylakoids

- A. In the fret of chloroplast
- B. Wall of the chloroplast
- C. In the chlorophyll
- D. In the stroma of the chloroplast

Answer: D



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22. State the exact location of the Epiblema

- A. The central part of a plant root
- B. Outermost layer of protective cells in a root
- C. Extensions of the roots arising from the epidermis
- D. A separation between the xylem and phloem

Answer: B



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23. State the exact location of the Hydathodes

- A. Epidermis of leaf, young stem and floral parts
- B. Margins of leaf where the vascular supply ends

C. Adaxial or abaxial surfaces of leaves

D. Both 2 and 3

Answer: D

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24. State the exact location of the Mesophyll cells

A. Located above the upper epidermis

B. Located between the upper and lower epidermis

C. Located below the lower epidermis

D. Located above the upper and below the lower epidermis

Answer: C



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25. State the exact location of the Root hair

- A. Extension of metaxylem
- B. Extension of epidermis
- C. Extension of cortex
- D. Extension of pith

Answer: B



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26. State the function of the Xylem Tissue

- A. Transport sugars, proteins, and other organic molecules in plants
- B. Transport of water and dissolved ions from the roots upwards through the plant
- C. Fibres provide support.
- D. Both 2 and 3

Answer: D



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27. State the function of the Histones

- A. Proteins that help in coiling and packaging of RNA into nucleosomes
- B. Encode particular proteins which express in the form of a trait.
- C. Proteins that help in coiling and packaging of DNA into nucleosomes.
- D. Help in sex determination.

Answer: C



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28. State the function of the Lenticels

- A. Permit the entrance of oxygen from the plants
- B. Permit the output of carbon dioxide and water vapour in the plants
- C. Promote gas exchange of oxygen, carbon dioxide and water vapour
- D. All of the above

Answer: D

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29. State the function of the Stomata

- A. Transpiration and translocation

- B. Exchange of gases and excretion
- C. Transpiration and exchange of gases
- D. Photosynthesis and translocation

Answer: C

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30. State the function of the Synapsis

- A. Pairing of acentric chromosomes during mitosis
- B. Pairing of non-homologous chromosomes during meiosis
- C. Pairing of any chromosomes during mitosis

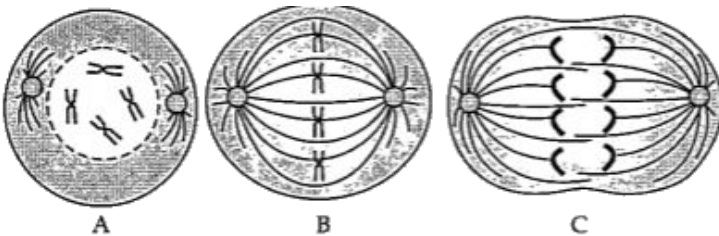
D. Pairing of homologous chromosomes during meiosis

Answer: D

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Questions Section Ii

1. Identify the figures numbering to a type of cell division showing different stages.



Choose the correct numbering given to different cell division stages of mitosis.

A. B - Metaphase, C-Early anaphase

B. A-Metaphase, B - Metaphase

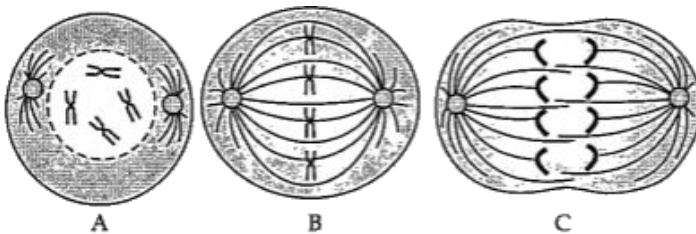
C. A- Prophase, C-Early anaphase

D. Both 1 and 3

Answer: D

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2. Identify the figures numbering to a type of cell division showing different stages.



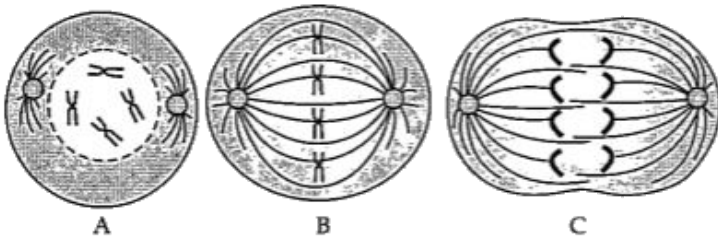
The condensation of chromosomes is observed in _____

- A. Prophase I
- B. Anaphase I
- C. Metaphase I
- D. None of these

Answer: A

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3. Identify the figures numbering to a type of cell division showing different stages.



In which stage of cell division chromosome gets attached to spindle by its centromere?

A. Anaplastosis

B. Prophase

C. Metaphase

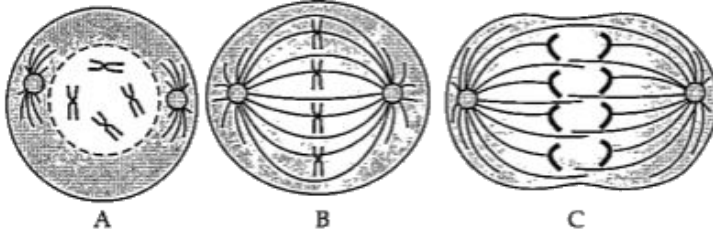
D. Telophase

Answer: C



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4. Identify the figures numbering to a type of cell division showing different stages.



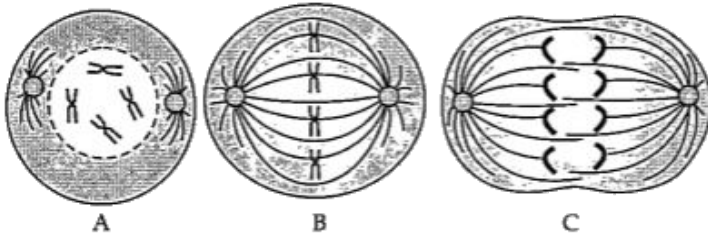
Which of the statements define Cytokinesis?

- A. A division of cytoplasm
- B. All nuclear changes during cell division
- C. Cleavage furrow deepen totally in animal cell
- D. All of these

Answer: D

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5. Identify the figures numbering to a type of cell division showing different stages.



During Anaphase of mitosis, the position of the arms of chromatids are:

- A. Towards the equator of the cell
- B. Towards the poles of the cell
- C. Varies from cell to cell
- D. At any place in the cell

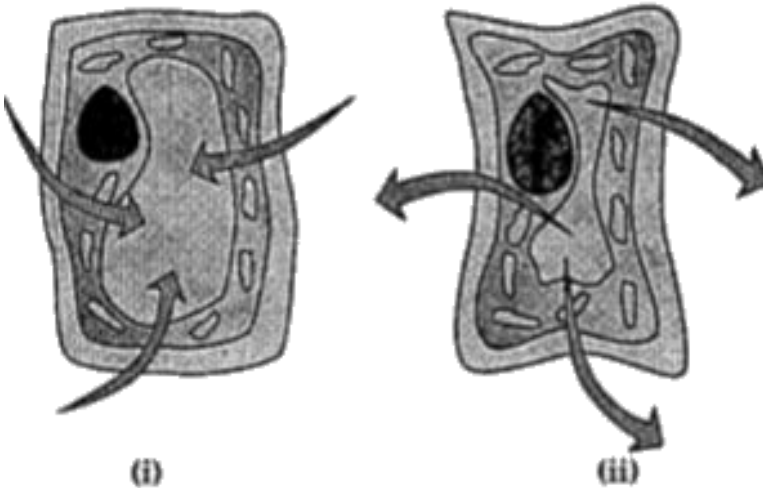
Answer: A



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6. Study the diagram of plant cell where water passes through the cell wall and answer the questions that follow

:



Identify the figure (i)

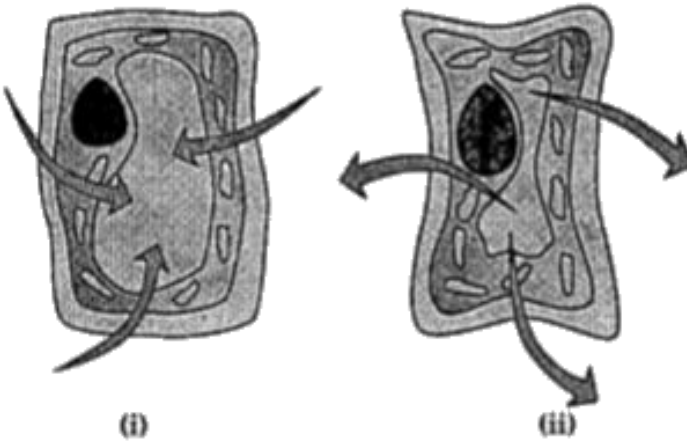
- A. Flaccid cell
- B. Turgid cell
- C. Plasmolysed cell

D. None of these

Answer: B

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7. Study the diagram of plant cell where water passes through the cell wall and answer the questions that follow :



Identify the figure (ii).

A. Flaccid cell

B. Turgid cell

C. Plasmolysed cell

D. None of these

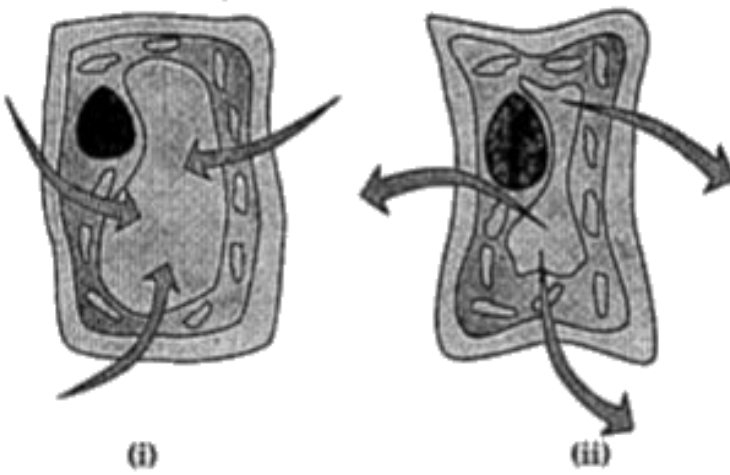
Answer: A



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8. Study the diagram of plant cell where water passes through the cell wall and answer the questions that follow

:



Water regulation within the plant cell occurs through the process:

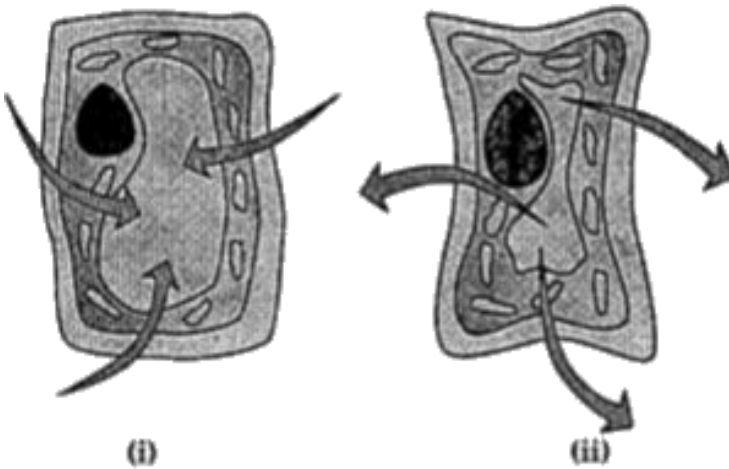
- A. Osmosis
- B. Diffusion
- C. Active transport
- D. Transpiration

Answer: A

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9. Study the diagram of plant cell where water passes through the cell wall and answer the questions that follow

:



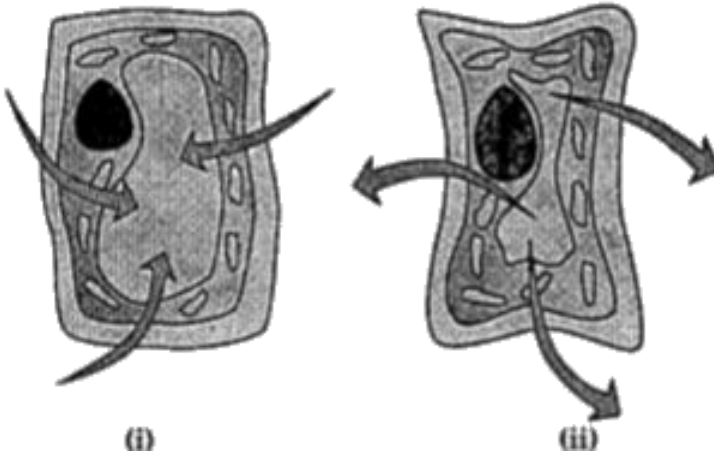
Marine fish when placed in tap water bursts because of:

- A. Endosmosis
- B. Exosmosis
- C. Diffusion
- D. Plasmolysis

Answer: A

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10. Study the diagram of plant cell where water passes through the cell wall and answer the questions that follow :



Match the phenomenon in absorption and conduction of

water and minerals:

Column A	Column B
i. Inward diffusion of water through a semi permeable membrane.	1. Active transport
ii. Movement of molecules from higher concentration to the lower concentration through direct contact.	2. Diffusion
iii. Passage of substance from lower concentration to the higher concentration through a living cell membrane using energy from cell.	3. Endosmosis
iv. Outward diffusion of water through membrane.	4. Osmosis
v. Movement of molecules from higher concentration to the lower concentration through a semi permeable membrane.	5. Exosmosis

A. i-2,ii-3,iii-5,iv-1,v-4

B. i-3,ii-2,iii-1,iv-5,v-4

C. i-3,ii-4,iii-2,iv-5,v-1

D. i-3,ii-2,iii-1,iv-4,v-5

Answer: B



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