Shri Vile Parle Kelavani Mandal's
C.N.M. School & N.D. Parekh Pre-Primary School

CLASS	DATE	FIRST TERM EXAMINATION 2021-22	TIME	MAX MARKS
X	12/10/21	SUBJECT – BIOLOGY	1 hr	40

NOTE :

- Answers to this paper must be written on the paper provided separately.
- Attempt all questions in Section I & any four questions from Section II.
- The intended marks for questions are given in brackets.
- You will not be allowed to write in the first 15 mins of the paper.
- This time is to be spent in reading the question paper.
- The time given at the head of the paper is the time allotted for writing the answers.
- Number of printed pages - 9

SECTION –I (15 M)

Q. 1 Name the following: (5)

a) The genotypic ratio of a monohybrid cross is

1) 1:3:1
2) 3:1
3) 1:2:1
4) 9:3:3:1

b) Any heritable feature of an organism.

1) Gene
2) Allele
3) Variation
4) Character

c) State of the cell where cell cannot absorb water.

1) Turgidity
2) Turgid
3) Flaccid
4) Flaccidity

d) Oozing out of cell sap through the cut parts of the plant mainly through stem.

1) Bleeding in plants
2) Guttation
3) Adhesion
4) Cohesion

e) The splitting of water molecules in the presence of light into hydrogen ions and hydroxyl ions in the grana.

1) Photolysis
2) Photophosphorylation
3) Transpiration
4) Evaporation

Q. 2 Complete the following: (5)

a) The chromosome number is _____ in meiosis.

1) Tripled
2) Reduced
3) Doubled
4) Not changed

b) A character that is suppressed is _____

1) Dominant
2) Recessive
3) Autosomes
4) Neither dominant nor recessive

c) Raisin swells up when kept in _____ solution,

1) Hypotonic
2) Hypertonic
3) Isotonic
4) Both hypertonic and isotonic

d) The minute pores on the epidermis of the leaf are known as _____.

1) Stomata
2) Stroma
3) Chlorophyll
4) Hydathode

e) The by product of photosynthesis is _____

1) Glucose
2) Starch
3) Oxygen
4) Both starch and glucose

Q.3 Choose the correct from each of the following: (5)

a) During telophase the
   1) Nuclear membrane is formed
   2) Nucleolus reappears
   3) Astral ray disappears
   4) All of these

b) The organism on which Gregor mendel had worked.
   1) *Pisum sativum*
   2) *Mangifera indica*
   3) *Rana tigrina*
   4) *Biston bitularia*

c) Marine fish when thrown under tap water bursts because of :
   1) Exosmosis
   2) Diffusion
   3) Plasmolysis
   4) Endosmosis

d) The chemical used in transpiration experiment is
   1) Calcium chloride
   2) Manganese dioxide
   3) Cobalt chloride
   4) Potassium Chloride

e) Full form of NADP
   1) Nicotinamide adenine dinucleotide phosphorous
   2) Nicotinamide adenine dinucleotide phosphate
   3) Nicotinamide and dinucleotide phosphate
   4) Nicotinamide adenosine dinucleotide phosphate

SECTION –II (15 M)

Q. 4 Explain the following terms: (5)

a) Cytokinesis-

1) In animal cell a cell plate is formed in the centre of the cell grows towards the periphery and divide the cell into two and in plant cell a constriction forms on the cell membrane(periphery) and grows towards the centre and divide the cell in to two.

2) In plant cell a cell plate is formed in the centre of the cell grows towards the periphery and divide the cell into two and in animal cell a constriction forms on the cell membrane(periphery) and grows towards the centre and divide the cell in to two.

3) In plant cell a cell plate is formed in the periphery of the cell grows towards the centre and divide the cell into two and in animal cell a constriction forms on the cell membrane(periphery) and grows towards the centre and divide the cell in to two.

4) In plant cell a cell plate is formed in the centre of the cell grows towards the periphery and divide the cell into two and in animal cell a constriction forms on the centre and grows towards the periphery and divide the cell in to two.

b) Law of independent assortment:

1) Out of a pair of contrasting characters no one is able to express.

2) Two members of a pair of factors separate during the formation of gametes.

3) Out of two pairs of contrasting characters, the distribution of one pair into gamete is independent to the distribution of other pair into gamete.

4) Out of a pair of contrasting characters one is able to express and the other one is suppressed

c) Root pressure-

1) Pressure exerted due to alternate osmosis and diffusion of root hair cells and cortical cells whereby water enter into the xylem of the root from the soil which helps in ascent of sap

2) Pressure exerted due to alternate turgidity and flaccidity of root hair cells and cortical cells whereby water enter into the phloem of the root from the soil which helps in ascent of sap.

3) Pressure exerted due to alternate turgidity and flaccidity of root hair cells and cortical cells whereby water enter into the xylem and phloem of the root from the soil which helps in ascent of sap.

4) Pressure exerted due to alternate turgidity and flaccidity of root hair cells and cortical cells whereby water enter into the xylem of the root from the soil which helps in ascent of sap.

d) Cohesion-

1) The molecular attraction by which the particles of the body are united throughout the mass.
2) Tendency of water molecules to slide from the surface of the leaf cells.
3) Pressure exerted by the cell wall on the fluid contents of the cell.
4) Oozing out of cell sap through the cut parts of the plant mainly through stem.

e) Translocation-

1) Transport of food materials in the form of insoluble sugar from leaves to different parts of the plant body by phloem.
2) Transport of food materials in the form of soluble sugar from leaves to different parts of the plant body by xylem.
3) Transport of food materials in the form of soluble sugar from different parts of the plant body to leaves by phloem,
4) Transport of food materials in the form of soluble sugar from leaves to different parts of the plant body by phloem.

Q. 5 Identify the exact location of the following: (5)

a) Centrosome

1) Cytoplasm of the animal cell.
2) Cytoplasm of the plant cell.
3) Cytoplasm of the plant cell and animal cell.
4) None.

b) Lenticel

1) On the Epidermis of leaves.
2) Waxy layer above the epidermis of leaves.
3) Extension from epidermal cell of the root.
4) On the surface of old stem.

c) Grana

1) Inside the chloroplast.
2) Inside the chlorophyll.
3) On the walls of thylakoids.
4) Below the upper epidermis of leaves.

d) Palisade tissue

1) On the margin of leaves.
2) Between the upper epidermis and spongy mesophyll of leaves.
3) Above the upper epidermis of leaves.
4) Between cuticle and lower epidermis.

e) Cuticle

1) Waxy layer only on the margin of leaves.
2) Waxy layer around mesophyll cells.
3) Waxy layer above the epidermis of leaves.
4) Waxy layer below the stem.

Q. 6 State the function for the following: (5)

a) Centromere

1) Hold the chromatids of chromosome in position.
2) Hold the chromosome in position.
3) Initiates cell division in animal cell.
4) Initiates cell division in plant cell.

b) Root hair

1) Absorbs only minerals.
2) Absorb water and minerals from the soil.
3) Absorb only water from the soil.
4) Absorb only minerals from the soil.

c) Chlorophyll

1) Traps sunlight for respiration.
2) Traps sunlight for photosynthesis and respiration.
3) Traps carbon dioxide for photosynthesis.
4) Traps sunlight for photosynthesis.

d) Stroma

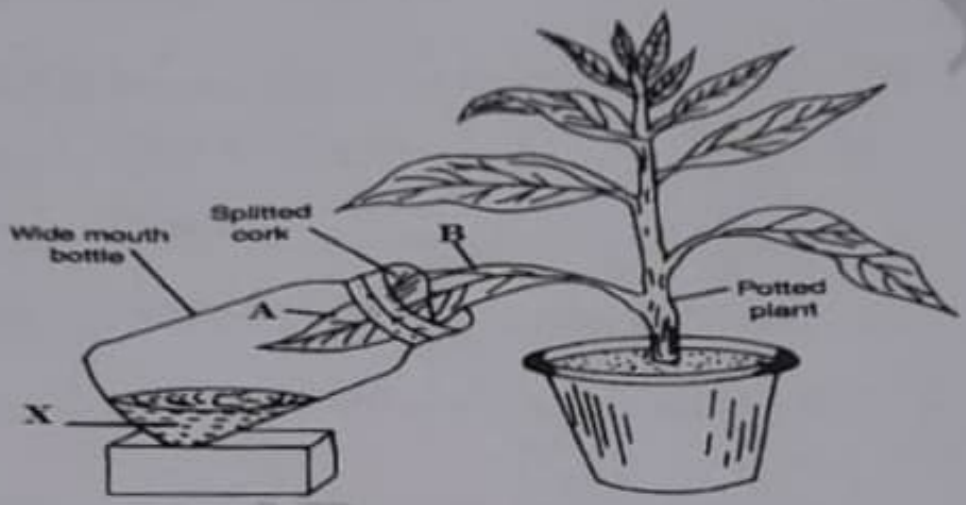
1) Site for dark reaction.
2) Site for light reaction.
3) Site for both dark reaction and light reaction.
4) Site for neither dark reaction nor light reaction.

e) Hydathodes

1) The pores through which both water vapour and water droplets come out for guttation.
2) The pores through which water droplets come out for transpiration.
3) The pores through which water droplets come out for guttation.
4) The pores through which water vapour come out for guttation.

SECTION –III (10 M)

Q.7 The figure given below represents an experiment performed to demonstrate a particular aspect of photosynthesis. **(5)**



a) Identify the aim of experiment

1) To show that CO_2 is necessary for photosynthesis.
2) To show that chlorophyll is necessary for photosynthesis.
3) To show that O_2 is necessary for photosynthesis.
4) To show that sunlight is necessary for photosynthesis.

b) Label part marked x

1) KOH for releasing CO_2.
2) KOH for absorbing CO_2.
3) KOH for absorbing N_2.
4) KOH for absorbing O_2.

c) Your observation for part labelled A & B after testing with iodine solution.

1) A-Does not become blue black, B- Becomes blue black.
2) A-Become blue black, B- Does not becomes blue black.
3) A Become pink, B- Becomes blue black.
4) A Become blue black, B- Becomes pink.

d) Name the process which is reverse of photosynthesis in terms of the end products.

1) Transpiration.
2) Both transpiration and respiration
3) Respiration.
4) Neither transpiration nor respiration.

e) Identify the overall chemical equation for the process photosynthesis.

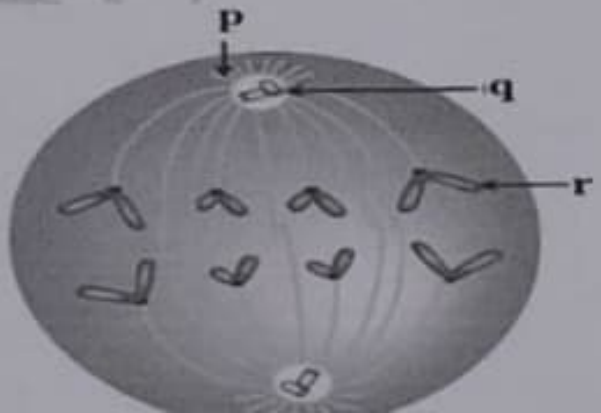
1) $6CO_2+12H_2O \xrightarrow{\text{Light \& Chlorophyll}} C_6H_{12}O_6 + 6H_2O + 6O_2$

2) $6CO_2+12H_2O \xrightarrow{\text{Chlorophyll}} C_6H_{12}O_6 + 6H_2O + 6O_2$

3) $CO_2+12H_2O \xrightarrow{\text{Light \& Chlorophyll}} C_6H_{12}O_6 + 6H_2O + O_2$

4) $6CO_2+6H_2O \xrightarrow{\text{Light \& Chlorophyll}} 6C_6H_{12}O_6 + 6H_2O + 6O_2$

Q. 8 Observe the diagram and answer the following questions: (5)



b) Label parts p, q & r

1) p - centriole, q – Aster and r- Chromatid
2) p - Aster, q – Chromatid and r- centriole
3) p - Chromatid, q – centriole and r- Aster
4) p - Aster, q – centriole and r- Chromatid

c) Name the stage prior to this stage

1) Telophase
2) Metaphase
3) Prophase
4) Anaphase

d) Name the unit of heredity

1) Gene
2) Allele.
3) Character.
4) Spindle

e) Give full form of DNA

1) Dioxy-ribonucleic acid.
2) De-ribonucleic acid
3) Deoxy-ribonucleic acid.
4) None.

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