JANKIDEVI SCHOOL PRELIM PAPER

Name the following:

1) Loss of water through a cut caused in the stem is
a) Stomata b) Guttation c) Hydathodes d) Bleeding

2) The process by which mineral salts enters the roots by diffusion is termed as
a) Active transport b) Passive transport c) Imbibition d) Turgidity

3) Plant in which the stomata are sunken
a) Begonia b) Nerium c) Crouton d) Variegated leaf

4) The plant on which Mendel conducted his experiment is
a) Pisum Satiivum b) Piisum sativum
c) Pisum sativum d) Pisumm sativum

5) The region of the chloroplast where the biosynthetic phase of photosynthesis occurs is
a) Stroma b) Thyalakoid c) Stoma d) Guard cell

Choose the correct answer:

1) Differentiate between the following pair on the basis of what is mentioned in brackets: human skin cell and human ovum (number of chromosomes) *
a) 23 & 23 b) 46 & 23 c) 46 & 46 d) Two set of chromosomes

2) The process of exudation of cell sap which takes place through tiny pores at the ends of the veins is
a) Excretion b) Guttation c) Bleeding d) Transpiration

3) Most of the transpiration in tall trees occurs through
a) Stomata b) Lenticels c) Cuticle d) Bark

4) Which of the following is not a Nitrogenous base in the DNA?
a) Guanine b) Thymine c) Adenosine d) Cytosine

5) Write the full form of NADP *
a) Nicotinamide Adenine Dinucleotide phosphate
b) Nicotinamide Adenosine Dinucleotide phosphate
c) Nicotin Adenine Dinuceotide phosphate
d) Nicotinmaide Adenine Dinuceo phosphate

Complete the following:
1) One of the internal factors which reduces the rate of transpiration is
a) Big size of the leaf b) Colour of the leaf

c) Sunken stomata d) Sunny day

2) The chlorophyll pigment has _____ as the core metal.
a) Iron b) Magnesium c) Sodium d) Potassium

3) State the odd term and mention the category of the remaining three terms Lenticels, Stomata, Hydathodes, Cuticle
a) Odd - Stomata, Category - Structures for guttation
b) Odd - Hydathodes, Category - Structures for transpiration
c) Odd - Lenticels, Category - Structures for photosynthesis
d) Odd - Cuticle, Category - Structures for transpiration

4) A cross between a tall plant (TT) and short pea plant (tt) resulted in progeny that were
a) all tall plants because tallness is the dominant trait
b) 3:1because tallness and shortness both are the expressed traits
c) all tall plants because tallness is the recessive trait
d) unrelated because height of pea plant is not governed by gene 'T' or 't'

5) The relative concentration of the solution that determines the direction of movement of water molecules is *
a) Turgidity b) Flacidity c) Tonicity d) Capillarity

SECTION II

Identify the function of each:

1) Guard cells
a) Helps in regulating opening & closing of Stomata
b) Regulates the rate of transpiration
c) Helps in exchange of gases in plants
d) All the above statements

2) Chromosomes
a) Chromosomes are hereditary vehicles that contain genes.
b) Chromosomes control the synthesis of structural proteins.
c) Chromosomes decondense and form the very thin thread-like chromatin fibres.
d) Chromosomes control cell metabolism.

3) Hydathodes
a) Transpiration b) Guttation c) Bleeding d) Conduction

4) Epidermis
a) Conduction b) Mechanical strength c) Guttation d) Protection

5) Potometer is
a) an instrument to measure the rate of guttation
b) an instrument to measure the rate of condensation
c) an instrument to measure the rate of photosynthesis
d) an instrument to measure the rate of uptake of water during transpiration

Explain the terms:

1) Transpiration is best defined as

a) Loss of water from the leaves.
b) Loss of water in the form of water vapour from the aerial parts of a plant.
c) Loss of water as water vapour by a plant.
d) Loss of water from the leaves in the form of water droplets by a plant.

2) Active transport

a) the movement of molecules from a region of their higher concentration to a region of their lower concentration.
b) the movement of particles from a region of lower concentration to a region of higher concentration using energy from respiration.
c) the movement of urine by relaxation of a sphincter muscle in the bladder.
d) the movement of water through a partially permeable membrane from a more dilute to a more concentrated solution.

3) Variation is

a) Transmission of characteristic and differences from parent to offspring
b) The observable characters of an organism
c) Visible difference shown by individuals within the offspring and species
d) None of the above

4) Alleles are

a) Alternative forms of genes
b) A gene that can express only when in a similar pair
c) Chromosomes that have crossed over
d) Chromosomes similar in shape and size

5) DNA replication is

a) The process of copying and duplicating a DNA molecule
b) The process of winding of the DNA around histone complex
c) The double helical structure forming a large molecule
d) The pairing of two identical chromosome in the nucleus during cell division

Identify the exact location:

1) Centromere *

a) Near the nucleus in animal cell
b) Attaching sister chromatids
c) Attaching non- sister chromatids
d) None of the above

2) Thylakoids *

a) In the inner membrane of the chloroplast
b) Wall of the chloroplast
c) In the chlorophyll
d) In the stroma of the chloroplast

3) Root hair*

a) Extension of the cortex
b) Extension of epithelium
c) Extension of epidermis
d) Extension of endodermis

4) Stomata

a) More on the upper surface of the dorsiventral leaf

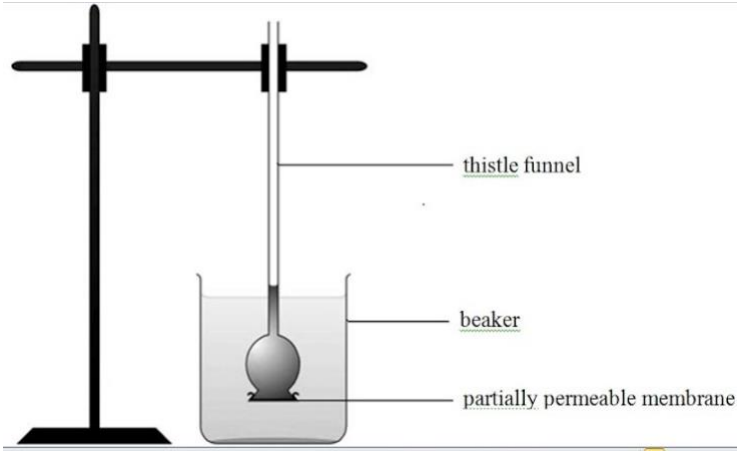
b) More on the lower surface of a bilateral leaf
c) Equally on both the upper and lower surfaces of a monocot leaf
d) Equally on both the upper and lower surfaces of a dicot leaf

5) Gene*
a) Attachment of the arms of the chromosomes
b) Inside the nucleolus of the cell
c) Specific DNA segments at a definite position on a chromosome
d) Inside the nucleus of the cell

SECTION III

Observe the Diagram and answer the questions:

An experiment was set up as shown. After an hour, the liquid level in the thistle funnel increased.
1) Which of the following shows the possible contents in the thistle funnel at the start of the experiment?



a) Thistle funnel - 10% sucrose; beaker - 10% sucreose
b) Thistle funnel - distilled water; beaker - 5% sucrose
c) Thistle funnel - 5% sucrose; beaker - 10% sucrose
d) Thistle funnel - 10% sucrose; beaker - distilled water

2) What does the experiment demonstrate?
a) Exosmosis takes place
b) Endosmosis takes place
c) Diffusion takes place
d) Active transport takes place

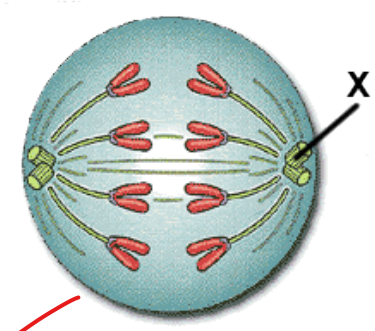
3) If a plant cell is placed instead of the thistle funnel in the beaker with 50% sugar solution then
a) Exosmosis takes place, leading to plasmolysis
b) Endosmosis takes place, leading to turgidity
c) Diffusion takes place keeping the cell as it is
d) Active transport takes place leading to turgidity

4) How long will the level of the water in the thistle funnel keep increasing?

a) Till the state of equilibrium is attained b) Keeps on rising
c) Till the levels of the liquids are the same
d) Concentration of the water molecules is the same

5) Root pressure in a plant is
a) The pressure by which the water molecules tend to cross the semipermeable membrane by osmosis.
b) The pressure exerted by the cell contents on the cell wall in a turgid cell.
c) The pressure developed in the cortical cells of the roots due to cell to cell osmosis.
d) The pressure exerted by the cell wall of a turgid cell on the cell contents.

1) What is the structure labeled "X" on the picture?



a) centriole b) spindle c) centrosome d) aster

2) What phase of cell division is seen in the diagram?
a) Metaphase b) Prophase c) Telophase d) Anaphase

3) Spindle fibres*
a) Between the two centromeres b) Between chromatid and centromere
c) Between two centrosomes d) Between the two asters

4) Where in the following is mitosis not occurring?
a) Repair (of a wound) in multicellular organisms
b) Asexual reproduction in unicellular organisms
c) Production of gametes d) All of the above use mitosis

5) The cell organelle which initiates and regulates the process of cell division
a) Stroma b) Centromere c) Centrosome d) Centriole

**** ALL THE BEST****