**END OF TERM EXAM 2019**

**BIOLOGY PAPER ONE FORM FOUR TERM 2 2019**

**Marking scheme**

**PAPER 231/1**

1. Cell wall; nucleus, cell membrane, cell vacuole
2. Endoplasmic reticulum, nucleus, mitochondrion, ceutriole, nuclear membrane, vesicle, Golgi body, lysosome
3. Root pressure

Capillarity

Cohesion

Adhesion

1. Transport of water & mineral salts

Absorption of water & mineral salts

Anchorage of the plant into the soil

Storage of synthesized food substances

Absorption of gases in hydrophytes

1. .
2. B - vascular cambium

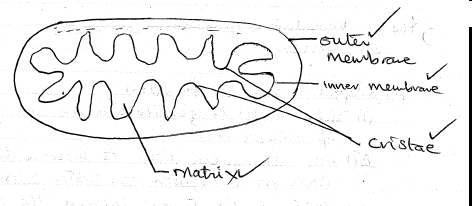
C - cortex

1. Adaptation of A to functions
2. Thin walled to facilitate/increase the rate of diffusion of mineral ions.
3. Has elongated cells to increase the surface area for absorption of water & mineral salts
4. Long to increase the surface area for absorption
5. **Isotonic Solution** A solution whose solute concentration is equal to that of the cell saps

**Plasmolysis:** a condition where a plant cell is placed in a hypertonic solution and looses water through osmosis to the solution thereby leading to slimukage of the cytoplasm and cell vacuole (OWTE)

**Turgidity** a condition where a plant cell is placed I a hypotonic solution and gains water through osmosis from the solution causing the cell to get enlarged/swollen (OWTE)

1. A diagram showing the structures of a mitochondrion



1. .
2. Chemical breakdown of food substances to release energy (1mk)
3. .
4. To prevent oxygen from dissolving into the yeast suspension (1mk)
5. To prevent carbon (IV) oxide in the atmosphere from dissolving into the lime water (2mks)
6. Anaerobic respiration (1mk)
7. Turns turpid(a white precipitate is formed( 1mk
8. .

a) Mitochondrion.

b) Has christae to increase surface area for respiration

\_has enzymes to carry out respiration (2mks

1. a) This is the amount of oxygen needed to eliminate lactic acid from muscles (1mk

b) Carbon (iv) oxide, water, energy (ATP)(3mks

1. a) this is the maintenance of the internal environment of cells under almost constant conditions (1mk

b) Regulation of blood glucose, regulation of amino acids (deamination, regulation of lipids, production of heat, detoxification.(2mks

1. Jaundice, hepatitis A&B, cirrhosis (2mks
2. a)The state of less activity in an organism for a number of days to avoid high temperatures(summer

b) State of less activity in an organism during winter (2mks

1. .

i) Prophase

ii) Prophase I

1. Metaphase
2. To increase chances of survival of their young ones which are highly susceptible to predators & exposed to adverse environmental
3. .

* Produce sweet scented nectar attract insects
* Brightly coloured petals to attract insects
* Well designed to allow insects to get into them
* Produce large sticky grains to stick on the bircles of the insects

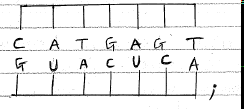
1. .

* Ovary transforms into a fruit
* Zygote changes into a seed
* Non essential parts of flower wither and fall off

1. .
2. Sigmoid curve is a normal growth curve that is S-shaped indicating growth is slow in young organisms but becomes rapid as organism approaches maturity while intermittent is seen in organisms of class arthropods which forms a stair like growth curve because of the period of ecdysis
3. Growth is the permanent or irreversible increase in body size. Development is the acquisition of new body structures by living organisms to perform specific function
4. .

Plants Animals

1. Growth is indefinite growth is definiate
2. Growth is restricted to certain regions growth takes place in the entire body
3. Cell expansion takes place cell expansion don’t take place
4. .
5. Spontaneous change in genetic makeup of an organism/changes in structure of DNA
6. Carries/stores genetic information, translates genetic information to characteristics, transmit genetic information to daughter cells
7. .



1. .
2. Is a phenomenon exhibited by green plants when growth in darkness, plants have elongated, weak and yellow stems with small yellow leaves
3. Helps plant to overcome dark conditions which is unfavorable for plant growth
4. .

|  |  |
| --- | --- |
| neurone | nerve |
| Is a cell responsible for generation and transmission of nerve impulses | A bunch of axons (nerve fibres) packed together for conduction of action potential |
| Is an individual cell | Is a group of neurons |

1. Gradual change from simple life forms to complex forms over a long period of time
2. Appendix, nictitating membrane, coccyx, ear muscles, wisdom teeth
3. .
4. Fossil records, geographical distribution, comparative anatomy, comparative embryology, cell biology, serology
5. Homologous structures have a common embryonic origin but have developed/adapted to perform different functions while analogous structures have different embryonic origins but have adapted/developed to perform same functions
6. .
7. .
8. Sensory neurone
9. ⃪ on the diagram
10. Shoots in response to gravity grow upwards exposing leaves for photosynthesis and roots grow downwards to absorb water and mineral salts from the soil
11. Most of the genes are sex-linked and are carried on the x – chromosomes; boys receive x chromosomes from the mother and Y chromosomes from the father; if X carries a recessive gene, it is more likely to be phenotypically expressed in boys