**ANESTAR SCHOOLS**

**FORM THREE**

**END TERM 2 MARKING SCHEME**

**BIOLOGY PAPER 1**

1. The formation of (plant) enzymes; The formation of pigments /chlorophyll; The formation of (plant) hormones / Auxins; The formation of tissues; stored as food reserves (3marks)
2. (a) Mitochondrion rej mitochondria; (1mk)

 (b) Cristae; (1mk)

 (c) Site where respiration occur;

 harbors respiratory enzymes] (any one) (1mk)

 (1mark)

1. System of naming where a species is assigned two scientific names i.e genus and the specific name.
2. Reducing can petition; preventing inbreeding; reducing the spread of epidemics; (2marks)
3. Light energy is prevented from reaching seedling; they die before they can photosynthesis as they use up all food reserves; (2marks)
4. Skeletal muscles contract to press at the blood is veins; the valves prevent the pressure from being drawn backwards; (2marks)
5. It catalyzes /speeds up the breakdown of hydrogen peroxide; to harmless water and oxygen (2marks)
6. It brings about genetic mixing / variation and so improves hybrid vigour /survival value (1mark)

b) Undesirable traits are transferred to progeny reducing the capacity to survive adversity. (1mark)

1. It photolysis water; to produce hydrogen ions needed in carbon (IV) oxide fixation

 (2marks)

1. It provides camouflage it provides the animals with a definitive pigment (1mark)
2. Agglutinins clump bacteria for phagocytosis Antitoxins denature neutralize poisons. Antibodies dump to bacteria, preventing their activity , opsonins adheres on the surface of the pathogens, lysins digests the cell membrane of the pathogen for the phagocytes to engulf (3marks)
3. They are highly branched for rapid transmission of impulse;
* The have intercalated disc for rapid transmission. They do not fatigue / do not form lactic acid
1. Resolving power is the ability to distinguish two close parts as separate entities; (1mk)
2. Diameter of field of view = 3mm

No of cells 20 cells

1mm = 1000μm

3mm = 3000μm;

Size of 1 cell = 3000 = 150μm; (2mks)

 20

 (1mark)

1. The amount of air taken in exchanged in one breath. (1mark)
2. The rhythmic contraction of alimentary canal muscles; it moves food along (the lumen of) the canal (2marks)
3. Provides a large surface area for reabsorption of water ions (2marks)
4. (a) X – Guard cell;

 W – Stoma; rej. Stomata

 b) Have chloroplasts that help in the process of photosynthesis;

c) Have thin outer wall and thick inner wall to enhance bulging during opening of stomata

1. It secrets bile; which is needed in the classification of lipids; and neutralizing of Hydrochloric acid) (2marks)

 (2marks)

1. The provide space for cytoplasm streaming in the translocation of nutrients. (1mark)
2. population density, dispersion
3. forms the basis for asexual reproduction, involved in repair of worn out tissues/ cells, involved in growth and development

(a) - Have thin film of moisture to dissolve gases for efficient diffusion;

 - Have a thin epithelium for faster diffusion of gases;

 - Have a large surface area for maximum gaseous exchange;

 - Have a network of blood capillaries for transportation of differing gases;

 (any three) (3mks)

(b) Red blood cell; (1mk)

1. The growth of an organism due to cell fertilization; healing of wounds; cell replacement of epidermal tissues (2marks)

(a) Aquatic ecosystem

(b) The shorter the fluid chain, the more energy can be derived from it, hence the larger the population it can support

1. The different forms of a gene (1mark)
2. The ABO blood groups in man (1mark)
3. Crossing-over in meiosis I; genetic mixing during fertilization; mutations of genes; the environment of the species; (3mks)
4. (a) Gas produced during anaerobic respiration

(b) Glucose Ethanol + Carbon (IV) oxide +Energy

(c) To remove O2; cooling to provide suitable temperature for enzymatic reactions/ avoid destroying/killing yeast

1. The availability of oxygen for respiration energy production; A concentration gradient of salt ions in the soil (2marks)

 (1mark)

1. lack/limited production of insulin by pancreas; injury to the Bowman’s capsule allowing free flow of glucose (2marks)
2. a) the cells divide mitotically to increase length (1mark)
3. Auxins stimulate cell division mitosis and cell elongation) (1mark)

 (i) Crossing over

(ii) Variations; which may lead to new genetic fruits either advantages or disadvantages to the organism/may lead to evolution

1. To carry the blood from the heart which is flowing under very high pressure (2marks)
2. The trachea is ciliated to trap the dust particles and other foreign materials (2marks)
3. liver (2marks)
4. photolysis, conversion of light energy into chemical energy( ATP)

 (2marks)

1. .(a) Osmosis

(b) The amount of sucrose solution increase; the sucrose solution has higher osmotic pressure hence passes into the potato cavity.

(c) There would be no movement of water; because the protoplasm is killed by boiling, hence the semi-permeable membrane. (1marks)

35. (i) Plasmodium sp

(ii) Schistosoma sp