**WANGU ZONE JOINT EXAM TERM 2 2019**

**BIOLOGY MARKING SCHEME PAPER 1**

1. a ) Golgi apparatus/golgi bodies

b) Nuclear membrane

c) Ribosomes

1. – To supply cells with nutrients/glucose amino acid/water because they have small surface area to volume ratio.
* To remove waste products of metabolism/carbon (IV) oxide/excess water/ Nitrogenous waste
1. - Numerous to increase the surface area over which gaseous exchange occur.
* Highly vascularized to bring blood to carry away oxygen and bring carbon (*IV*) oxide
* Are this walled to increase the rate of diffusion
1. Pancreas stimulated to produce insulin hormone; which stimulate liver cells to convert glucose to glycogen for storage; surplus converted to fat for storage/ and increase cellular respiration
2. a ) Exoskeleton

b) - protection of inner parts

* attachment of muscles
* Reduce water loss
* Support body tissues and organs

c) Body segmented/jointed appendages/ open circulatory system.

1. -Split by light energy to oxygen gas and hydrogen ions Atoms;
* Provide hydrogen ions that combine with carbon (IV) oxide to form simple sugar.
1. I) Condensation

ii) Hydrolysis

iii sucrose/disaccharide

1. a.) Kill animals for food reducing their numbers;

b) Better adapted organisms survive and reproduce increasing in number/poor adapted organisms die hence reduce in number;

 c) Some parasites transmit pathogens that kills host/parasites weakens host that are killed by predators

1. a) Oxidize food to produce energy required for active transport.

b)- Reabsorption of sugars and salts by kidney tubules

* Absorption of digested food from alimentary canal
* Excretion of waste products from body cells
1. a .) Bryophyta

b,) K – capsule

 L - seta

C,) – Anchorage

* Absorb water and mineral salts.
1. – Have chlorophyll that absorb light for photosynthesis
* Have grana that increases surface area for package of chlorophyll
* Has stoma that contain enzymes that catalyse the process of photosynthesis;
1. a, ) phloem

b) L – sieve plate

 Q – plasmodesmata

 K – phloem parenchyma

1. – large brain capacity relative to body size
* Forward facing eyes with binocular vision
* Upright postural/ bipedal stand
* Manipulative or prehensile fore limbs
* Ability to express thought by complex system of communication through language
1. a, )The shoot will curve upward while root curve downward; gravity causes auxins to migrate and accumulate on the lower side in shoot; high concentration of auxins stimulate more elongation of cells on the lower side causing upward curvature;.

 In root high concentration of auxins inhibit cell elongation resulting to downward curvature;

b) Bothe root and shoot continued to growing horizontally; rotating clinostat prevent accumulation of auxins on one side/uniform distribution of auxins bring about uniform growth on all sides of both shoot and roots

1. a ) 42

b) carnivorous

c) Have more premolars since some are modified to carnassial teeth than molars;

1. a ) The mosquito larvae are suffocated to death/pupal are killed/breaking the life cycle of mosquito

b) Prevent entry of air in water hence water pollution;

1. placenta is fully developed which take the role of ovaries in producing the hormone progesterone which maintain pregnancy;
2. in cold elector pilli muscles contract; causing hair to raise thus trapping air,
3. a ) Anaerobic respiration Rej respiration alone

b) Causes fatigue/ muscle cramps

c) Ethanol/carbon (IV) oxide/ Energy

1. carbon (IV) oxide combines with water in plasma to form weak carbonic acid; in presence of enzyme carbonic anhydrase that speed up the conversion;
2. a ) M – moulting stage

b) Moulting allow growth

 c) Intermittent growth curve

1. – protandry
* Protogyny
* Dioecious
* Self sterility/incompatibility
* Heterostyl/Dichogamy
1. a, ) sister chromatid separates
* sister chromatid moves to opposite pole of spindle fibre

b) Gamete formation/formation of sex cells that are haploid;

* source of variations due to crossing over
1. a ) production of plants and animals that have superior/greater productivity/beneficial characteristics. Than either of their parents.

b) Condition in which individuals has more two sets of sets of chromosomes;

1. i) most termites will have moved towards the end with moist cotton wool

ii) Negative chemotaxis or positive hydrotaxis

iii) Enables them escape from harmful stimuli

1. i) Inversion

ii) Downs syndrome/ albinism/sickle cell anaemia

1. a) Thoracic vertebra

Reasons – Has long and broad neural spine

* short transverse process that bears tuberculum facets
* Has demifacets/capitulum facets and tuberculum facets for articulating with ribs

 b) Tuberculum facet

1. Expose the leaves for photosynthesis

-Expose flowers to agents of pollination

- Expose fruits and seeds to agents of dispersal