**CHAMPIONS JET MARCH 2019**

**MARKING SCHEME.**

1. (a) To maintain ecological balance

(b) To allow for observation

1. (a) This is the suppression /inhibition of lateral buds sprouting by the apical bud due to higher auxin concentration of auxin at the apical bud (AWTTE)

(b) Some seeds are exposed to very cold temperature ; for a maximum period required to germinate; and stimulate higher temperature break their dormancy.

1. (a) Copper (II) sulphate ; and sodium hydroxide; (Rj CuSO4/NaOH)

(b) Activate enzyme;

1. (a) Vaccination is the introduction of weakenal/kicked pathogens into an organism to stimulate the production of antibiotics.

(b) stimulation of production of antibodies against specific pathogen;

- Boosts immunity by vaccination at intervals.

1. Breakdown of fats/ oils into small droplets; to increase surface are; for lipase; enzyme; to act on it.
2. (a) Due to incomplete breakdown of food material.

* Some energy is locked up in the intermediate compound.

(b) (i) The extra amount of oxygen required to completely breakdown lactic acid that accumulate during aerobic respiration to water, carbon(IV) oxide and energy.

(ii) The ratio of volume of carbon(IV) oxide produced to volume of oxygen consumed during respiration

1. (a) Visking tubing will be turgid; since it will gain; water by osmosis; from the beaker.

(b) (i) Cell membrane is destroyed hence no osmosis.

(ii) Faster movement of water molecules across the semi-permeable membrane accelerating osmosis.; (AWTTE)

1. (a) Release of substance / form of energy into the environment by human activities in such quantities whose effects are either harmful/ unpleasant to human / living organisms; (AWTTE)

(b) Global warming – increase of global temperature due to excessive increase / accumulation n of carbon(IV) oxide / Nitrogen oxide /methane /CFCS in the atmosphere. (AWTTE)

- Green house effect- the formation of a thick layer of CO2 that surrounds the upper layer of the earth atmosphere trapping heat and prevent it from radiating out and getting lost in the space / preventing excessive cooling of the earth.

1. (a) – life was brought into existence by a supreme being.

* Life forms were created in a perfect form and have remained unchanged over time.
* The knowledge is based on faith and cannot be disputed.

(b)

|  |  |  |
| --- | --- | --- |
| Structure | Man | Ape |
| Pelvis | Broked and flattened | Narrow and elongated |
| Incisor | Small | Large |

( c) – Give direct evidence of the type of animal / plant that existed at a certain geological age.

* Show gradient increase in complexity of organism over time.
* Show almost complete evolution history of the development of certain orgaism / man/ horse.(Any two )

1. (i) Sablingual salivary glands;

(ii) Chelecysto kinin;

1. (i) Counter current flow;

(ii)Maintain sleep concentration gradient across the respiratory surface for maximum gaseous exchange.;

(b) loop of henle; testes;