**SUNRISE EXAM**

**BIOLOGY PAPER 1**

**MARKING SCHEME**

***Q1***

a) (i) Salmonellatyphi

(ii) Entamoebahistolytica

Rej/f rule of binomial nomenclature not followed

***Q2***

i) Site for protein synthesis;

ii) Destroys worn out organelles;

iii)Synthesis of ribosomes;

***Q3***

a) Haemophilia; anaemia

b) Fight disease causing organisms (Defence)

Blood clotting

Distribution of heat

***Q4***

a) Epigeal

A type of germination where by the cotyledons are brought above the soil surface.

Hypogeal

A type of germination where by the cotyledons remain underground

b) i) Prothoracic gland;

i) Corpora allata;

***Q5***

a) –Tuft of hair on nose and ear;

-Premature baldness

Rej porcupine man

b) i) DNA/Deoxyribonucleic acid

ii) Presence of thymine base;

***Q6***

1. Homologous structures- structures in organisms having same embryonic origin but performing different

function

b)- Mutation produces mutants that are resistant to drugs.

- Produce lytic enzymes that breakdown drugs.

***Q7***

a) Stomata

b) Contain chlorophyll pigment that traps light energy for photosynthesis;

c) Requires ATP; from light stage

Requires Hydrogen Ions; (H+) (OWTTE)

***Q9***

a) Stomata; Epidermis; (young plants)

Lenticels; Aerenchymatisues;

Pneumatophores;

Cuticle (first 2 only)

b) Creates a steep concentration gradient; for maximum gaseous exchange;

***Q10***

a) Capture-recapture;

b) Enough time allowed for grasshoppers to randomly mix;

The marking does not affect the animals behavior;

No migration or immigration;

c) Population=First capture x second capture

Marked recapture

= 36 X 45;

4

= 405 grasshoppers

***Q 11***

i) a) Site for implantation;

b) Storage of sperms

ii) Contraction and relaxation of smooth muscles of walls of fallopian tube;

Cilia waft the ovum towards the uterus.

***Q 12***

The energy is lost through radiation into the atmosphere

Some of the energy is absorbed by land and water surfaces

***Q 13***

a) Monocotyledon

b) Vascular bundles are scattered in the cortex

c) A-Epidermis

B -Phloem

***Q 14***

Cared subject

Solving environmental problems

Acquisition of Scientific skills

Research tool/international cooperation

***Q 15***

a) Mild stimulant

b) Treatment of malaria Rej antibiotic

c) Plant and animal breeding

**Q 16**

a) Ability of an organism to detect/perceive and respond appropriately to a stimulus

b) A change in an environment factor.

***Q 17***

a) Alcoholic fermentation/anaerobic respiration;

b) Used in Beer/wine/alcoholic beverage industry;

Used in Bread Baking

Making of composed manure

Production of Biogas (Mark any two correct answers)

***Q 18***

a) Scientific system of giving two names (Genus and species name) to an organism;

Acc Rule of double naming of organism.

b) Genus name must be in small letters;

The names should be (printed) in italics;

***Q 19***

Sclerenchyma;

Collenchyma;

Xylem (tissues) (Acc xylem vessels and iracheds)

***Q 20***

Tracheoles; rej Tracheal

***Q 21***

1. Where a plant goes through two generations sporophyte (spore producing stage) and gametophyte

(gamete producing stage) stage to complete its life cycle;

b) They perform both photosynthetic and reproductive functions;

***Q 22***

Biconcave in shape to increase the surface area for gaseous exchange;

Absence of nucleus to create more space for packing of haemoglobin;

Thin membrane for rapid diffusion of gases;

Presence of carbonic Anhydrase for loading of Carbon (IV)

Presence of Haemoglobine that has a high affinity for oxygen;

Flexible/pliable to squeeze through the narrow blood capillaries *(mark 1st 2)*

***Q 23***

a) Diffusion

b) i) Blue black colour observed

ii) Brown/yellow colour Iodine/Acccolour of Iodine Persist;

c) Iodine molecules being smaller diffuse from the beaker to the Visking tubing;

Starch molecules being too large do not diffuse out of the Visking tubing into the beaker;

***Q 24***

|  |  |
| --- | --- |
| Wind Pollination | Insect Pollination |
| * Anther hang outside the flower | Found inside the flower |
| * Pollen grains small/light/smooth | Large/hairy/heavy |
| * Stigma large and feathering | Small and sticky |

***Q 25***

a) Protoctista;

b) P- Cilliumrej cilia

N- Contractile vacuole

***Q 26***

a) Diabetes Inspidus

b) Antiduiretic Hormone/Vasopressin;