

**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

- a) 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 = $\frac{\text{First capture} \times \text{second capture}}{\text{Marked recapture}}$

$$= \frac{36 \times 45}{4}$$

$$= 405 \text{ grasshoppers}$$

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 tracheids)

Q 20

- Tracheoles; rej Tracheal

Q 21

- a) 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	Large/hairy/heavy

small/light/smooth	
- 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;