

# KAPSABET HIGH SCHOOL 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

- 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<sup>+</sup>) (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 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 1<sup>st</sup> 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;