

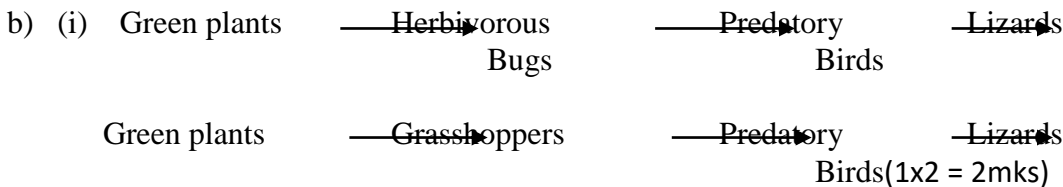
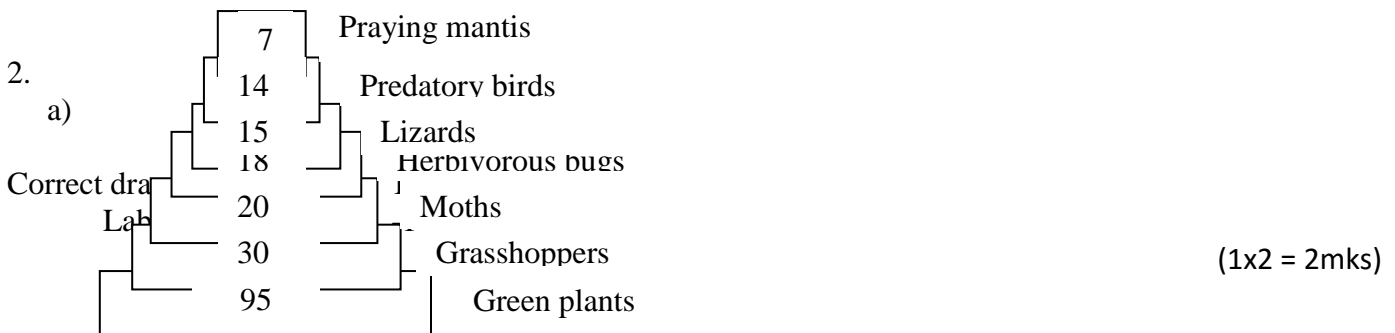
**MARKING SCHEME BIOLOGY FORM 3 PAPER 2 TERM TWO**

- 1.a) (i) Yeast (1x1 = 1mk)  
 (ii) Budding (1x1 = 1mk)  
 (iii)

- Causes plant and animal diseases e.g. athletes foot
- Causes food spoilage
- Source of food e.g. mushroom
- Used for manufacture of antibodies (1x2 = 2mks)

- b) (i) A group of organisms that can freely, naturally interbreed and produce a fertile/viable offspring (1x2 = 2mks)

- (ii)
- First name (generic) should start with a capital letter. The specific name is written in small letters
  - If hand written the names should be underlined separately
  - If typed they should be printed in italics (1x2 = 2mks)



- (ii)
- Not all green plants materials are digested
  - Heat lost in faeces
  - Indigestible materials
  - Transpiration/sweating (1x2 = 2mks)

- (iii)
- Herbivorous bugs and grasshoppers both feed on / compete for greenplants
  - Praying mantis and predatory birds compete for herbivorous bugs (1x2 = 2mks)

3.  
 a)  
 S- Deamination; Liver;  
 T – Excretion; Kidney; (2 x2 = 4mks)

b) Liver → Hepatic veins → vena cava; → Heart → Lungs → Heart → Aorta → Renal artery

Correct identity 1mk  
Sequence 1 mk  
(2x1 = 2mks)

c) Aerobic respiration; since water is released;

(1x2 = 2mks)

4.

a) Transpiration (1x1 = 1mk)

b) Prevent evaporation of water from the surface (1x1 = 1mk)

c) (i) The level of water drops (1x1 = 1mk)

(ii) Due to loss of water to the atmosphere by transpiration (1x1 = 1mk)

d) (i) Faster drop in water level (1x1 = 1mk)

(ii) No change in water level; (1x1 = 1mk)

(iii) Slower/very slow drop in water level; (1x1 = 1mk)

e) Another set up using a leafless twig; (1x1 = 1mk)

5.a) (i) Fungi/mycophyta: (1x1 = 1mk)

(ii) Non-green/ lacks chlorophyll;

- Body made up of hyphae/ mycelia;  
(Asexual) reproduction: OWWTE (1x3 = 3mks)

b)

- Body is covered by fur or hair;
- Have mammary glands (for milk production);
- Have external earlobes;
- Have highly developed brain;
- Have muscular diaphragm that have sweat glands;
- Have muscular diaphragm (that thoracic cavity from abdominal cavity);

Mark first three  
(1x4 = 4mks)

6.

a)

- For exchanged axis award
- Scale must be correct
- For graphs on separate axis, mark both and award the highest

A = 2

S = 1

P = 1

ℓ = 2

C = 2

b)  $X = 120 \pm 3$

$Y = 140 \pm 3$

(1x2 = 2mks)

c) Person X is able to regulate glucose, while Y is likely to be diabetic (1x2 = 2mks)

d) X – Insulin; is released excess glucose is converted to glycogen

Y – Insulin is not released; the decrease is due to glucose being lost in urine (1x4 = 4mks)

e) A.T.P / Adenozine triphosphate (1x1 = 1mk)

f) Deaminated; the ammonia combines with CO<sub>2</sub> to form urea (and H<sub>2</sub>O); (carbohydrate group

is oxidized / stored as glycogen) (1x2 = 2mks)

g) Oxidized to produce energy / converted to neutral fats and stored around some organs (1x1 = 1mk)

7.

- Water dispersed fruit/seeds  
Mesocarp/ seed have air spaces thus light/ buoyant to float; therefore carried away by water;  
The fruits/seeds are protected from soaking by waterproof pericarp
- Animal dispersed fruits/seeds

Presence of hooks; for attachment to animals; thus carried to other places; fruits are brightly coloured; succulent; aromatic to attract animals; which feed on them.

The seed coats are resistant to digestive enzymes; thus taken to other places with the animal droppings; (away from parent plant)

- Self dispersed fruits/seeds/explosive mechanism;  
The dry pods /fruits split (along lines of weakness/ saturates); scattering seeds away from mother plant
- Wind dispersed fruits/seeds

They are light; to be carried away by wind

Presence of hairs /wing-like structures; to increase surface area for buoyancy to enhance the fruits/seeds to be blown away by wind;

Censer mechanisms; perforated capsule is usually loosely attached; to the stalk/ the long stalk is swayed by wind scattering seeds

(2 x 10 = 20mks)

8.

### **Mouth**

Chewed using teeth; to increase surface area for enzyme action;

Ptyalin/salivary amylase digest starch; into maltose;

Saliva has water; to moisten/soften food;

Saliva has mucus; for lubrication;

Saliva has slightly alkaline – suitable pH for ptyalin/amylase;

### **Stomach**

pepsin digests protein; into peptides;

No starch digestion due to unsuitable pH/ presence of HCl/Acidic media;

HCL activate pepsinogen into pepsin;

HCL provide suitable pH for action of pepsin;

### **Duodenum**

Trypsin digests proteins; into peptides;

Pancreatic amylase digest starch into maltose;

Sodium bicarbonate : provides suitable pH/neutralize acidic chyle;

Bile juice: provided suitable pH /neutralise acidic chyle;

### **Ileum**

Peptidase digests peptides into amino acids;

Maltase digest maltose into glucose;

(20 mks)