

# FORM FOUR END OF SECOND TERM EXAM

Kenya Certificate of Secondary Education

## BIOLOGY

Paper - 231/3

July/August 2018

### Marking Scheme

#### 1. K and L

a) i) Subdivision - Angiosperm;  
angiospermae / angiospermatophyta 1 mark

#### ii) Reasons

- i) Flowering plants.
- ii) Their reproductive organs are found within flowers; 1 mark

b) i) K - class monocotyledonae

Rej Monocotyledon.

L - class dicotyledonae Rej Dicotyledon

#### ii) K - Reasons

- the floral parts in three's or multiple of threes.
- parallel veins in their leaves.
- presence of a sheath
- the leaves are generally narrow.
- fibrous root system

2 marks

#### L - Reason

- the floral parts in four /fives or their multiples;
- Network veins in their leaes.
- Presence of leaf petiole / leaf stalk;
- Leaves are generally broad;

**any 2 marks**

c) i) L - insect 1 mark

- ii) - Brightly coloured.
- scented 1 mark

d)

Specimen K	Specimen L
- Parallel veined	Net veined
- Smooth margin	serrated margin
- Hairy lamina	smooth lamina
- Purple in colour	green in colour
- Thick Lamina	thin lamina
- Narrow lamina	broad lamina

3 marks

Rej: Difference in stem and roots. (any 3 )

2. a) A - Effervescence / few bubbles 1 mark

B - More / faster effervescence / more bubbles Rej. Reaction 1 mark

b) No effervescence Rej. No reaction 1 mark

c) Enzymes in living tissues break down hydrogen peroxide to water and oxygen; causing effervescence (both must be mentioned) ✓

Crushing the piece of potato increases the ✓ surface area for the functioning /action of enzymes; hence more /faster effervescence.

Boiling kills the cells / denatures enzymes ✓ hence no chemical reaction, hence no effervescence. (total 4 - max 3 marks)

d) i) Relights a glowing splint. 1 mark

ii) Oxygen 1 mark

e) i) Hydrogen peroxide water + oxygen

Rej: Chemical equation. 1 mark

ii) Neutralises / removes toxic substances from the body. (1 mark)

Food substance	Procedure	observation	Conclusion
Starch	to the food substance add iodine solution	colour changes to blue black	Starch present
Reducing sugars	to the food substance, add Benedict's solution, heat to boil	colour changes from blue-green - yellow and finally brown / yellow/ brown/green/ orange	Reducing sugars present

3.

- a) B - lungs of a mammal 1 mark  
C - fish gill / gill of a fish. 1 mark
- b) Gaseous exchange. 1 mark  
Excretion of carbon (IV) oxide  
*any of the two.*
- c) B<sub>1</sub> - Rings of cartilage.  
B<sub>2</sub> - Lung Rej: Lungs because the label line touches only one of them.  
B<sub>3</sub> - heart 3 marks
- d) i) K<sub>1</sub> - Gill raker.  
K<sub>2</sub> - gill bar / arc  
K<sub>3</sub> - gill filaments. 3 marks
- ii) K<sub>1</sub> - Gill rakers are pointed ✓ for trapping solid particles /prevent sold particles from reaching gill filament and causing damage.
- K<sub>3</sub> - Numerous gill filaments to increase the surface are for gaseous exchange.  
(4 marks)