231/3

Biology

Paper 3

PRACTICAL

$1^{3/4}$ Hours

July/Aug 2018

LANY ACHIEVERS F4 EXAMINATION 2018

(Kenya Certificate Of Secondary Education)

MARKING SCHEME

1. a) i) Blue-black colour 1mk
   ii) Starch 1mk
   iii) test tube A – blue-black colour remains 1mk
   Test tube B - blue-black colour fades 1mk
   iv) Test tube A- absence of amylase enzyme to digest starch 1mk
   Test tube B- Amylase enzyme digests starch to maltose 1mk
   v) To provide optimum temperature for enzyme activity 1mk
   vi) A control experiment 1mk

   b) i) – orange / Brown colour 1mk

   - Reducing sugars present 1mk

   ii) - orange/brown colour

   - reducing sugars moved out of the visking tubing ; by diffusion 2mk

   iii) - absorption of mineral salts from the soil by plant roots.

   - Movement of manufactured food from the leaves to other parts of the plant/translocation
   - Gaseous exchange
   - Excretion of metabolic wastes from cells 1mk

2. a) i) fresh water/ aquatic 1mk
   ii) –large air spaces / aerenchyma tissue 3mk
   - sclereids
   - Stomata on the upper epidermis / absence of stomata on the lower epidermis.
   - Absence of cuticle.
   - Poorly developed vascular bundles

iii) -stomata

-epidermis 2mk

b) i) mitosis 1mk

ii) Anaphase 1m

iii) – sister chromatids separate

-sister chromatids move to opposite poles of spindle 2mks

iv) F- spindle fibre 1mk

G – Centriole 1mk

v) – Basis of asexual reproduction

- Repair of worn out tissues

- Growth

-Retention of chromosome number 1mk

3. a) X- lumbar vertebra Rej. Lumbar vertebrae 1mk

Y- Rib 1mk

Z- humerus 1mk

b) 1-muscle attachment 1mk

2- Support the weight of vertebra 1mk

c) 3-Thoracic vertebra 1mk

4- sternum/ sternabra 1mk

5- Scapula 1mk

6- Ulna 1mk

d) Ball and socket 1mk

e) – has head for articulating with (glenoid cavity of) scapula 3mks

- Has tuberosities for muscke sttachment
- Has bicipital grooves for passage of tendons if muscles
- Has trochlea for articulating with sigmoid notch
- Has olecranon fossa with which the olecranon process fits(during extension of the arm)