

**231/3 – BIOLOGY PAPER 3 - MARKING SCHEME**

1. (a) Leaf compound; (1mk)  
 Leaf margin serrated; (1mk)  
 Pinnate leaf; (1mk)
- (b) SPECIMEN                      STEPS FOLLOWED                      IDENTITY
- |    |            |       |               |       |
|----|------------|-------|---------------|-------|
| S1 | 1b, 3b, 5b | (1mk) | Malvaceae     | (1mk) |
| S2 | 1b, 3a, 4a | (1mk) | Nyctaginaceae | (1mk) |
| Q  | 1a, 2b     | (1mk) | Commelinaceae | (1mk) |
| X  | 1a, 2a     | (1mk) | Graminae      | (1mk) |
| Y  | 1b, 3b, 5a | (1mk) | Astereraceae  | (1mk) |
- (c) - Brightly coloured to attract insects;  
 - Conspicuous bracts to attract insects;  
 - Anthers and stigma enclosed inside a tube / tubular corolla to be reached by visiting insects;  
 - Landing stage for insects; / landing platform; / broad / large to provide landing platform;
2. (a) 1. Ilium;  
 2. Coccyx;  
 3. Femur;
- (b) (i) Ball and socket joint; rej. Hip joint / ball joint / ball socket  
 (ii) Femur has a rounded head to articulate with a acetabulum;
- (c) (i) Lumbar vertebra; rej. Lumbar vertebrae  
 (ii) (Large surface area) for attachment of muscles;  
 - Protects spinal cord; / nerves
- (d) - It is wide to provide a large surface area for attachment of muscles;  
 - It is large to provide firm support to the body of the animals;
- (e) (i) Obturator foramen;  
 (ii) Allows passage of blood vessels, nerves and muscles;

3.

Food being tested for	Procedure	Observation	Conclusion
VITAMIN C	Put (2ml) of DCPIP - Add (food sample) X (shaking) after each drop.	DCPIP is decolourized	Vitamin C present.
NON REDUCING SUGAR	Put (2ml) of X - Add Dil. Hcl (m) boil and cool the mixture. - Add NaHCO <sub>3</sub> until the fizzing sound stops. - Add Benedicts solution and heat the mixture.	Colour changes from blue green or yellow / orange / finally brown.	Non-Reducing sugar present;
PROTEIN	- Put (2ml) of X. - Add sodium hydroxide (N). - Add 2 drops of CUSO <sub>4(l)</sub> shaking after each drop.	No observable colour change; blue colour of CUSO <sub>4</sub> remains.	Protein absent.
FATS / LIPIDS	Put a drop of X onto the filter paper and dry it over a source of heat.	No translucent mark;	Fats absent.