

MARKING SCHEME
231/3 BIOLOGY PAPER 3

1. a) Specimen R.

Mode of pollination: insect pollination: (1mark)

Adaptive features:

- i. Large petals to make it conspicuous;
- ii. Brightly coloured petals to attract insects (at distance) (2marks)

Specimen SI

Mode of pollination: wind pollination (1mrk)

Adaptive features:

- i. Anthers are large attached to long filaments to be easily swayed by wind to disperse pollen grains.
- ii. Stigma is large/feathery/hangs outside the flower to increase surface area for trapping pollen grains in the air.

b) Any of these parts labeled on photograph R

- Petal (S)
- Stigma
- Anther
- Style

(4marks)

c) X – Filament.

Any first two
= 2marks

R	S
<ul style="list-style-type: none"> • Large (and conspicuous) • Brightly coloured petals • Relatively regular shaped funnel shaped • Stigma enclosed within the flower 	<ul style="list-style-type: none"> Smell (and inconspicuous) Not brightly coloured petals No particular shape Stigma hanging outside the flower.

d) Class : dicotyledonous (reject wrong spelling)

Reason: five floral parts/petals.

2. a) Bone

Identity

Where found

R	Rib;	Rib Cage/thoracic region;	
S	Pelvic girdle;	Pelvic/hip region;	
T	Femur;	Upper hind limb/leg;	
V	Thoracic vertebra;	Thoracic/chest region;	4marks.

b) i) Ball and socket joint; (1mark)

ii) Permits movement of limb in all planes/direction/360°. (1mark)

Acc: Permits bone to move in more than one plane/all planes/directions;

c) i) Sacrum (1mark)

- ii) -Provides the surface for muscle attachment of pelvic girdle
- Transmits the weight of the body of a stationery animal to pelvic girdle and legs
- Distributes the weight of the body to all parts of vertebral column during movement;

(1mrk)

Acc: any first one.

d) i) - Long to increase surface area for attachment of intercostals muscles;

- Curved to increase space in the thoracic cavity;
- Tuberculum and capitalum for articulation with the thoracic vertebra/tubacular facet and capitalardem-facet respectivel; (2marks)

(II)



Award marks for;
Articulation of tuberculum and capitulum with tubercular facet and capitular demi-face; (1mark)
Curvature of the rib ; (1mark)

- e) **part Z** – Obturator foramen;
Function – For passage of blood vessels/and nerves (to the lower limb) ; (2marks)
- f) Hinge joint (1mark)

3. a)

Food substance	Procedure	Observation	Conclusion
Starch	To the solution add(a few drops of) iodine solution;	Solution/mixture turns blue black/ dark blue /black;	Starch present;
Protein	Add sodium hydroxide Solution then copperII sulphate solution;	Purple/violet colour;	Proteins present;

(6mrks)

NB Award marks for correct procedure, observation and conclusion only.

- b) starch - mouth/duodenum;
 proteins - stomach/ileum;

(2mrks)

- c) Starch - Amylase/Ptyalin;
 Protein - Pepsin;

(2mrks)

- d) starch - marasmus;
 proteins - kwashiorkor; (reject wrong spelling)

(2mrks)

Total

(12mrks)