

BIOLOGY PAPER 231/3

MAKING SCHEME

1. a) A – scapula;
B- Humerus;
C – Ulna and radius **(3mks)**
- b) i) Hinge joint **(1mk)**
ii) Ball and socket **(1mk)**
- c)
 - Glenoid cavity articulates with head of humerus.
 - Has spine for muscles attachment
 - Has flat and broad surface for muscle attachment
 - Has acromion for articulation with clavicle bone / collar bone , providing support
 - Has metacromion and acromion – muscle attachment **(4mks)**
- d) i) Olecranon process
 - ii) - Prevent overstretching of the arm; 1 mk
 - Muscles and ligament attachment; 2mk

2. a)

Food substance	Procedure	Observation	Conclusion
Starch	Put 1 ml of K add 2 drops of iodine	No observable change	Starch absent
Reducing sugar	To 1ml K add equal amount of Benedict solution and boil	No observable colour /change of Benedict retained	Reducing sugar absent
Non – reducing sugar	-To 1ml of K add 2 drops of diluted HCL and boil; -Cool and add NaHCO ₃ until fizzing stops; -Add equal volumes of Benedict solution and boil	Colour changes from blue to green to yellow /brown / orange	Non – reducing sugars present
Protein	To 1ml of K add 1ml of NaOH followed by 2 drops of copper sulphate then shake	Colour changes to purple/ violet	Protein present

(10mks)

- b) i) Sucrase **(1mk)**
ii) Ileum; accept small intestine
 - c) Accept any correct adaptation **(2mks)**
3. a)
 1. a) Body bilaterally symmetrical..... go to 2
b) Body radially symmetricalsee anemone
 2. a) With limbsgo to 3
b) Without limbsgo to 7
 3. a) With six legs go to 4
b) With more than six legs go to 5
 4. a)With two pairs of wings Honey bee
b) With one pair of wings House fly
 5. a)With eight legsspider
b) With more than eight legs go to 6
 6. a)With two pairs of legs in each segmentMillipede
b) With one pair of legs in each segmentCentipede
 7. a) Body segmented.....Earthworm
b) Body not segmented..... Roundworm

(Allow 1mk for 13 correct steps – 13x1 = 13mks)
 - b) i) Arthropoda; **(1mk)**
Rej. Wrong spelling

ii) Body segmented
Jointed appendages;

(1mk)

