1. The photographs below represent three mammalian bones, labelled **E**, **F** and **G**.

E

F

G

(a) With reasons, identify the bones.

Bone	Identity	Reason(s)
E	Scapula / shoulder blade	- has glenoid cavity / socket / depression to articulate with the ball of head of the humerus
		- spine / ridge (for attachment of muscle) (3 marks)
F	Humerus	- has a ball / head / rounded head that articulates with the (socket on the) scapula
		- has condyles that articulate with ulna & radius (sigmoid notch)
		- has trochlea / olecranon fossa (2 marks)
G	Radius attached to ulna / Radius, ulna / Radius, ulna	- has greater / lesser tuberosity / tuberosities
	Radius & ulna / Radius ulna	- has Bicipital groove
	Reject: Radius along, ulna alone	- (ulna) has sigmoid notch (notch) for articulation with the (lower end of) humerus.
	Radius → together with radius.	- has olecranon process. (2 marks)

(b) Name the joints formed at the anterior and posterior ends of **F**.

Anterior end ..... (1 mark)

Posterior end ..... (1 mark)

(c) State the types of movement facilitated by the joint at the anterior end of specimen labelled **F**. (1 mark)

Rotation / Rotational / up and down / Side-ways (of the arm)
All planes / 360° / Forward & Backwards

(d) (i) Name the substance found inside the living tissue of the specimen represented in photograph **F**. (1 mark)

Manufacture of blood cells / R.B.C / W.B.C / platelets.
Reject – Manufacture of blood elements.

(ii) State the function of the substance named in (d) (i) above. (1 mark)

Bone Marrow

Reject – Marrow alone.
– Short & long bone marrow. / wrong spelling is rejected totally.

(e) (i) Name the muscle bundle usually attached onto the front of the specimen represented in photograph **F**. (1 mark)

Biceps. Reject: ~~Flexor~~ Biceps,

(ii) State the function of the muscle bundle named in (e) (i) above. (1 mark)

– Contract & Relax to move the lower arm (upwards & downwards)
– Contract to move the lower arm upwards / flex / bend the arm.
– Relax to move the lower arm downwards / extend / straighten / stretch the arm.

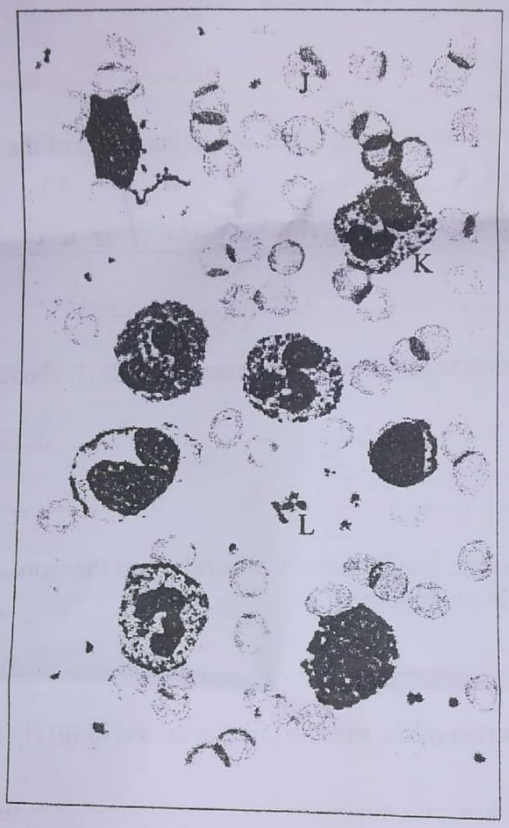
d(i) Haemotopoiesis

Hand / Arm.

Q1 – Support / ~~Transport~~
Q2 – Transport in animals / Ecology / Nutrition
Q3 – Reproduction /

Tasks

2. Below is a photograph of a blood smear from a normal individual. The arrangement is arbitrary and the number of blood elements is greater than what would normally occur in an actual microscopic field.



(a) (i) Name the blood elements labelled **J**, **K** and **L**. (3 marks)

J Erythrocyte(s) / Red blood cell(s)

K Leucocyte(s) / White blood cell(s) / eosinophil / Basophil

L Thrombocyte(s) / platelete(s)

(ii) State **one** function of each of the elements named in (a) (i) above. (3 marks)

J Accept transportation of respiratory gases.

K - fight diseases

L .....

(b) The photograph below is of a section of the human intestines of a patient suffering from a common parasitic disease.

G

Observation

Hands on nut Match

Teach disease using ICT

(i) Name the disease. (1 mark)

Amoebic dysentary / Amoebiasis

(ii) Name the parasite that causes the disease in (b) (i) above. (1 mark)

Identification

Entamoeba histolytica

(iii) State **two** control measures for the disease. (2 marks)

- Boiling / chlorinating / treating drinking water
- proper Storage of Food / Keeping the Food Covered
- proper cooking of Food
- proper Faeces disposal in pit latrines / toilets / Keeping the toilet Clean

Washing fruit/food before eating ≡ Washing hands before handling Food / after visiting toilet / latrine

(iv) State the effects of having the parts labelled **G** in the patient's intestines. (2 marks)

- Pain / Abdominal pain / ache
- Bloody Stool / Bleeding in the intestines
- Impaired absorption / Impaired digestion of Food / Indigestion

Reject :- Stomach ache.

- presence of mucus in the Stool

3. You are provided with a specimen labelled **H**. With the aid of a hand lens, examine the external features of the specimen.

(a) (i) What part of a plant is specimen **H**? (1 mark)

Fruit(s)

(ii) Give **two** reasons for your answer in (a) (i) above. (2 marks)

① Has two scars / point of attachment to remain of style and point of attachment to the receptacle / fruit stalk

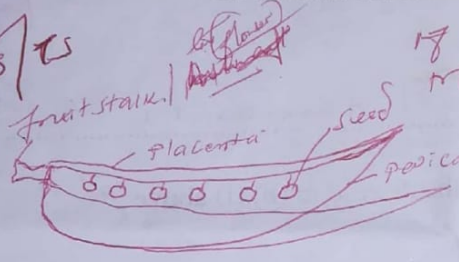
② Presence of seeds

③ Presence of pericarp / fruit wall

(b) Open up specimen **H** longitudinally.

Use a hand lens to observe the internal structures of specimen **H**.

(i) Draw and label the internal cut surface and associated structures of specimen **H**. (5 marks)



(ii) Explain how you would determine the magnification of the drawing made in (b) (i) above. (2 marks)

Linear Magnification = Length of drawing / Actual length of object

Mg is calculated by measuring L-g D and dividing it by the actual length of the object.

Reject self explation / self - dispersion / Censor mechanism / Selfe

Selve - dispersal mechanism

self (iii) State the mode of dispersal for seeds of specimen **H**. (1 mark)

Explosive mechanism / self-dispersal mechanism / 1

Self

*Identify

(iv) Explain how seeds of specimen **H** are dispersed through the mode stated in (b) (iii) above. (3 marks)

*Explanation

- When the pod dries / loses water; pressure builds from within the pod; The pod splits open along line of weakness / sutures (and the seeds are thrown away from the parent plant). 3

- When the pod dries / loses water; the pod splits open violently; along the sutures

* The pod distuce along line of weakness

* The lines of weakness splits / distince — Wrong

Accept

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THIS IS THE LAST PRINTED PAGE.

The photographs below represent three mammalian bones, labelled **E**, **F** and **G**.

E

F

G

(a) With reasons, identify the bones.

Bone	Identity	Reason(s)
E	Scapula / shoulder blade	- has glenoid cavity / socket / depression to articulate with the ball of the humerus / head of the humerus - spine / ridge (for attachment of muscle) (3 marks)
F	humerus / Humerus	- has a ball / head / rounded head that articulates with the (socket on the) scapula - has coracoid process - has acromion (together with reason) (2 marks)
G	Bicipital groove Radius attached to ulna Radius ulna / Radius radius Radius & ulna / Radial ulna Radius along ulna alone	- has condyles that articulate with ulna & radius (Sigmoid notch) - has trochlea / olecranon fossa - has greater / lesser tuberosity / tuberosities - (ulna) has sigmoid notch / notch for articulation with the (lower end of) humerus - has olecranon process (2 marks)

(b) Name the joints formed at the anterior and posterior ends of **F**.

Anterior end ..... (1 mark)

Posterior end ..... (1 mark)