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 / a socket / depression to articulate w the ball of 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 |
| | | (2 marks) |
| G | Radius attached to ulna / Radius ulna / Radius & ulna / Radius ulna | * (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 ....Ball & socket / Ball socket / Socket & Ball / Socket Ball.... (1 mark)

Posterior end ....hinge.... (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 if clearly.

(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)
– Contracts to move the lower arm upwards / Flex / bend the arm
– Relaxes to move the lower arm downwards / extends / Straighten / Stretch the arm.

d(i) Haemopoiesis

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

Marks

973

A463

**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.


Observation

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

Spelling must be correct.

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

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

Reject: - monocytes - lymphocytes

**L** Thrombocyte(s) / platelete(s)

Reject: - granulocytes.

(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**

a (i) & (ii) - Tied

Functions

(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 not Match

Teach disease using pict

(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 toilets clean
- washing hands before handling food / after visiting toilet / latrine

Washing fruit/food before eating ≡

(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.

Accept - (legume) fruit
- (Pod) fruit

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

Fruit(s) Reject outrageous spelling mistake i.e fruid together with reasons; underline i.e fruit, fruity, fruit & proceed

Seed

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

*Mark the first two.

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

② Presence of seeds

③ Presence of pericarp / fruit wall Accept: Has epicarp, mesocarp & endocarp fused; (Not distinct)

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

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

3 max 2

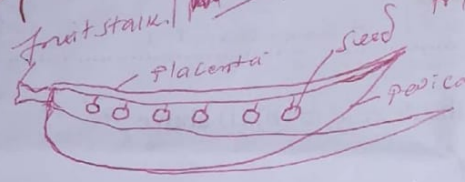
(i) Draw and label the internal cut surface and associated structures of specimen **H**. (5 marks)

If b(i) is blank then deny mark for b(ii) even if it is correct.

*Drawing + Labeling

(Seed / ovule)

*Shading / circuit




D - 2
L - 3
05

WD - 0

Manipulation

b(ii) = Score 0/2

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

Mg = DL / AL Reject use of initials

(Linear) Magnification = Length of drawing / Actual length of object

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

02

*(Further consultation)
Mark if the correct formula is indicated in the space for b(i) & missing in the space for b(ii)

OWTTE

Mg = DL over AL

Reject = D L ... of A L

Reject self explosion / self-dispersal / Censor mechanism / Sepie

Solve - dispersal mechanism

(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 distinces along line of weakness

The line of weakness splits / distinces - Wrong

Accept

14

3 pts are independently

Sure building)
sini created
Plently
e force

**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 / a socket / depression to articulate w the ball of the humerus |
| | Spine / ridge (for attachement of muscle) | |
| F | Has coracoid process<br>Has acromion<br>Humerus / Humerus | Has a ball / head / rounded head that articulates with the (socket on the) scapula |
| | | (3 marks) |
| G | Has condyles that articulate with ulna & radius<br>Has trochlea / olecranon fossa<br>Has greater / lesser tuberosity / tuberosities<br>Has Bicipital groove | * (ulna) has signoid notch / notch for articulation with the (lower end of) humerus.<br>* Has olecranon process. |
| | | (2 marks) |

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

Anterior end ....Ball & socket / Ball socket / Socket & Ball / Socket Ball.... (1 mark)

Posterior end ....Hinge.... (1 mark)