1.3 Features of organisms

0610_s15_qp_63 Q: 3

Fig. 3.1 shows four different animals that pollinate flowers.

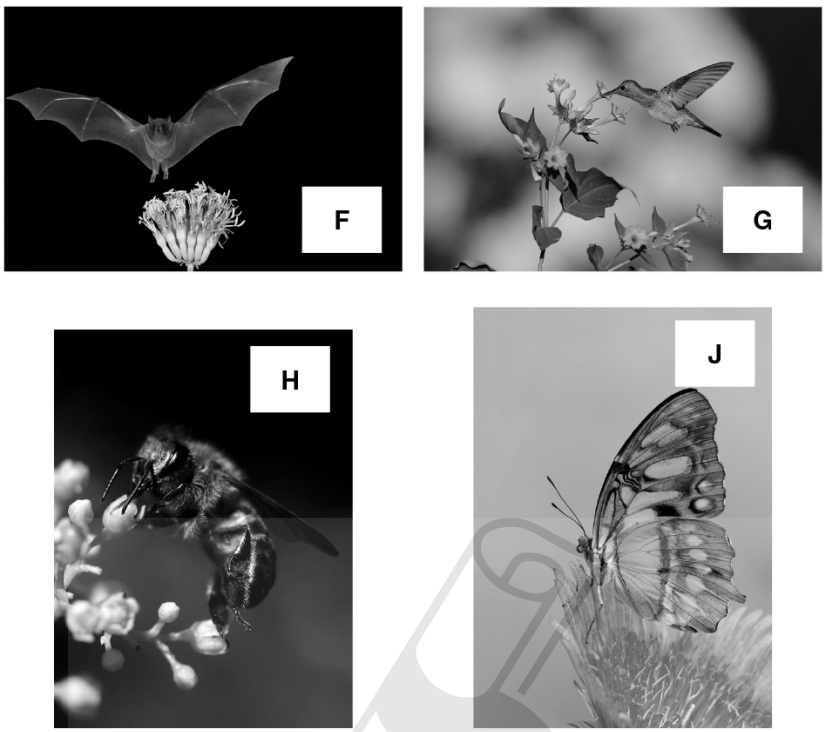


Fig. 3.1 **not to scale**

(a) (i) State **one** way, visible in Fig. 3.1, that animal **G** is different from animal **H**.

..... [1]

(ii) State **two** characteristics, **visible** in Fig. 3.1, that are common to all four animals, **F**, **G**, **H** and **J**.

1 .....

2 .....

[2]

(b) (i) State the letters of the **two** animals, **F**, **G**, **H** or **J**, which belong to the same animal group.

..... and ..... [1]

(ii) Identify the animal group to which they belong. Suggest a reason why you have chosen this group.

animal group .....

reason for choice .....

.....

[2]

[Total: 6]

02.0610_w15_qp_61 Q: 3

Fig 3.1 shows one complete leaf from two different species of plant, **P** and **Q**.

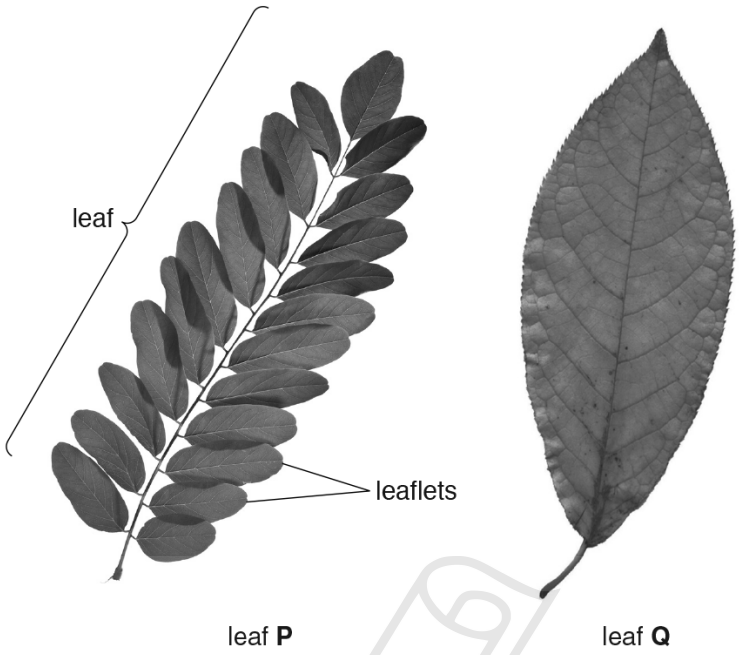


Fig. 3.1

(a) (i) State **two** features which are visible in **both** leaf **P** and leaf **Q**.

1 .....

2 .....

[2]

(ii) State **two** ways, other than size, in which leaf **P** differs from leaf **Q**.

1 .....

2 .....

[2]

(b) Fig. 3.2 shows part of a climbing plant.

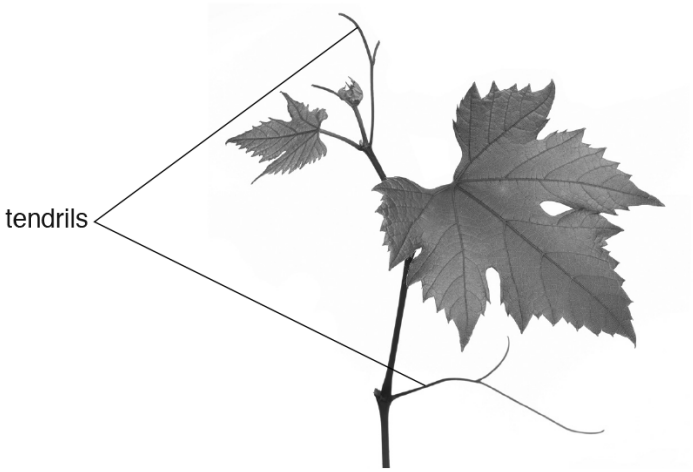


Fig. 3.2

(i) In the space below make a large drawing of the part of the climbing plant shown in Fig. 3.2.

(ii) Suggest **one** advantage and **one** disadvantage to the plant of having tendrils, as shown in Fig. 3.2.

advantage .....

.....

disadvantage .....

.....

[2]

(c) Fig. 3.3 shows a leaf of a monocotyledonous plant.

Fig. 3.3

The leaves shown in Fig 3.1 and Fig. 3.2 are all from eudicotyledonous (dicotyledonous) plants.

Complete Table 3.1 by stating **two** ways in which the leaves shown in Fig. 3.1 and Fig. 3.2 differ from the leaf of a monocotyledonous plant, shown in Fig. 3.3.

Table 3.1.

feature	eudicotyledonous	monocotyledonous

[3]

[Total: 13]

03.0610_w14_qp_62 Q: 3

Fig. 3.1 shows a male and a female fly of the same species.

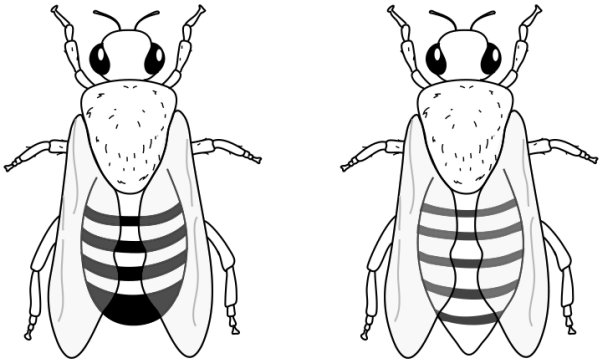


Fig. 3.1

(a) Describe **two** differences, **visible** in Fig. 3.1, between the male and female fly.

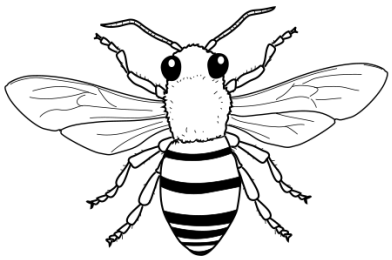
Complete Table 3.1 to record these differences.

Table 3.1

feature	male	female

[3]

(b) Fig. 3.2 shows a different type of insect, a bee.



not drawn to scale

Fig. 3.2

Insects can be recognised by having three parts to the body and three pairs of legs, amongst other features.

Describe **two other** features, visible in Fig. 3.1 **and** Fig. 3.2 that show that the fly and the bee are both identified as insects.

1 .....

2 .....[2]

(c) Both flies and bees are attracted to coloured flowers.

Suggest how you could find out which colours attract more bees than flies.

.....

.....

.....

.....

.....

.....

.....

.....

.....

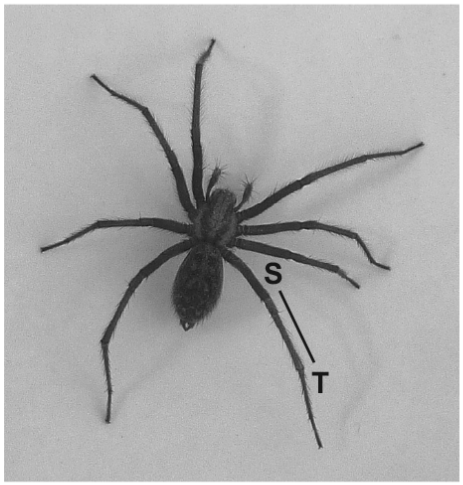
.....

.....[5]

[Total: 10]

04.0610_s13_qp_63 Q: 2

Fig. 2.1 shows an arthropod.



× 2.5

Fig. 2.1

(a) You are going to calculate the actual length of the part of the leg that is marked **ST** in Fig. 2.1.

Measure the length of line **ST**.

length of line **ST** ..... mm

Calculate the actual length of the part of the leg that is marked **ST**.

Show your working.

actual length of leg ..... mm [3]

(b) Use features, **visible** in Fig. 2.1, to identify the group of arthropods to which this animal belongs.

Give **two** reasons for your answer.

Group .....

reason 1 .....

.....

reason 2 .....

..... [3]

[Total: 6]

05.0610_w13_qp_61 Q: 3

Slugs and snails are molluscs that can live in water or on land.

Fig. 3.1 shows a slug and a snail.

Fig. 3.1

(a) (i) Describe **two** features, **visible** in Fig. 3.1, that suggest the slug and the snail belong to the same group of molluscs.

1 .....

2 ..... [2]

(ii) Describe **one** difference, other than size, **visible** in Fig. 3.1, between the slug and the snail.

..... [1]

Fig. 3.2 shows a shell of a mollusc.

Fig. 3.2

(b) Suggest the importance of the shell to molluscs that belong to this group.

.....

..... [1]

[Total: 4]

06.0610_s12_qp_61 Q: 2

Fig. 2.1 shows three worms. One is a nematode.

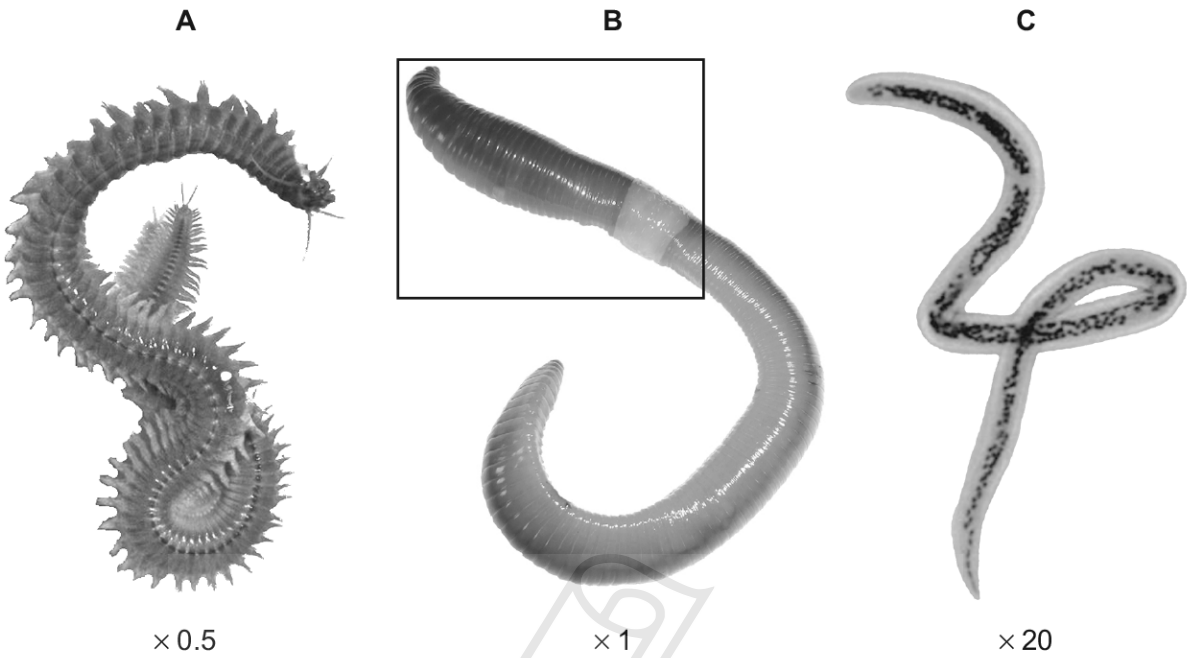


Fig. 2.1

(a) (i) Write the letter that identifies a nematode worm ..... [1]

(ii) Give **two** reasons for your answer.

.....

.....

.....

..... [2]

(iii) The other two worms belong to a different group.

Name this group ..... [1]

(b) Part of the worm labelled **B** is shown in a rectangle.

Make a large labelled drawing of this part of worm **B**.

(c) Some students studied a population of 40 worms. They measured the lengths of 35 worms. These measurements are shown in Table 2.1.

(i) Complete Table 2.1 by measuring the lengths of the five worms shown in Fig. 2.2. Use a ruler to measure them.

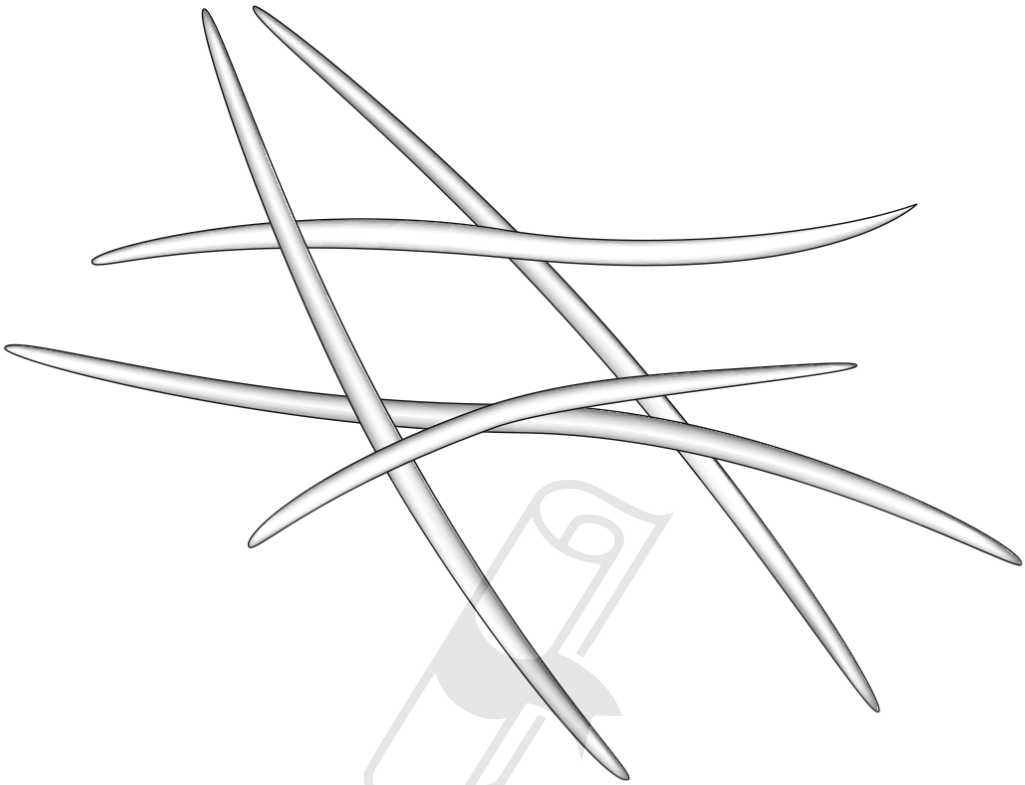


Fig. 2.2

Table 2.1

length/cm	7.0	8.1	10.8	6.2	11.4	9.0	10.3	12.1	13.5	5.6
length/cm	11.3	7.9	12.9	7.4	13.1	13.7	15.5	8.8	14.1	15.2
length/cm	9.6	8.4	14.7	16.0	7.2	10.5	9.2	12.4	6.7	13.3
length/cm	14.0	11.6	12.6	12.2	8.3	.....	.....	.....	.....	.....

Record the length of each worm in Table 2.1 [2]

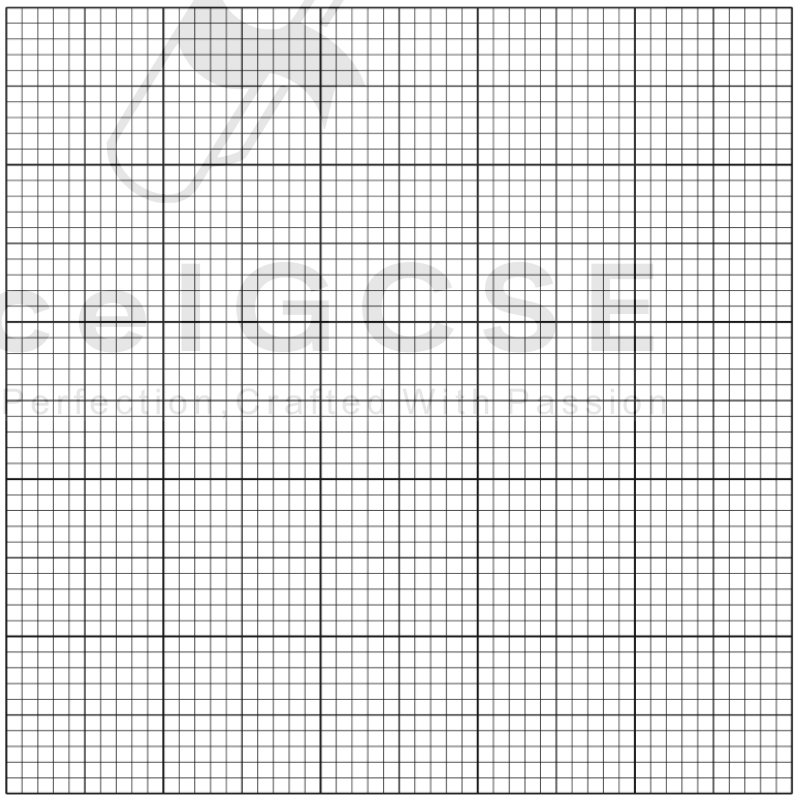
(ii) Complete the tally chart, Table 2.2, to show the number of worms in each range of lengths.

Table 2.2

range of lengths / cm	tally	frequency
5.0 - 6.9	.....	.....
7.0 - 8.9	.....	.....
9.0 - 10.9	.....	.....
11.0 - 12.9	.....	.....
13.0 - 14.9	.....	.....
15.0 - 16.9	.....	.....

[3]

(iii) Use the data from Table 2.2 to plot a histogram showing the frequency of each range of lengths.



[4]

(iv) Suggest a reason for the shape of the histogram.

.....

..... [1]

[Total: 18]

07.0610_w12_qp_61 Q: 3

Fig. 3.1 shows an invertebrate animal.

Fig. 3.1

Fig. 3.2 shows the external features of six other animals.

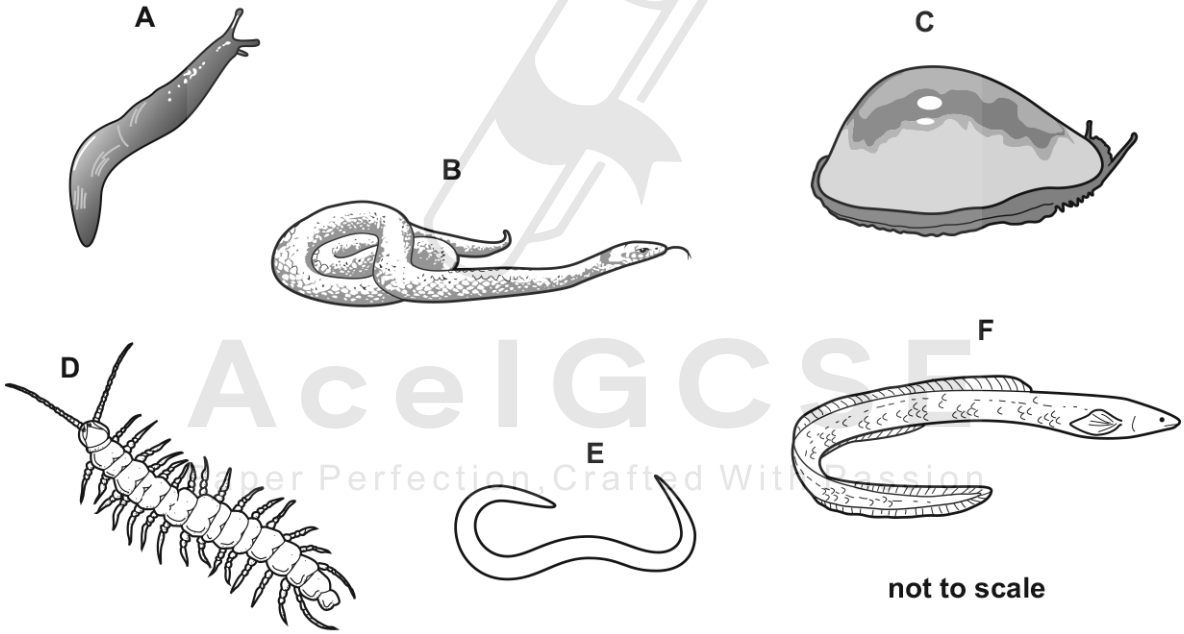


Fig. 3.2

(a) Give the letters of **two** animals that belong to the same group as the invertebrate shown in Fig. 3.1.

1 .....

2 ..... [2]

(b) Describe **two** similarities, **visible** in Fig. 3.2, between animal **B** and animal **F**.

1 .....

.....

2 .....

..... [2]

[Total: 4]

01.0610_s15_qp_63 Q: 3

	Answer	Mark	Partial Marks
(a) (i)	**G** has feathers / beak / no pattern on wings / 2 or fewer legs / no antennae ;	max [1]	
(ii)	wings ; legs ; eyes ;	max [2]	
(b) (i)	**H** and **J** ;	[1]	
(ii)	*animal group* - insect / arthropod ; *reason* – antennae / 3 pairs of legs / compound eyes / 3 body parts ;	[2]	
		[Total: 6]	

02.0610_w15_qp_61 Q: 3

	Answer	Mark	Partial Marks
(a) (i)	lamina / blade ; midrib ; veins ; petiole / stalk ;	max [2]	
(ii)	*any 2 from:* (P) is divided into leaflets ; (P) has smooth edge ; (P) does not have pointed tip ;	[2]	**A ora** if explicitly stated in terms of Q. **A** edge of Q is toothed / irregular **ignore** surface area
(b) (i)	drawing of outline uses single clear unbroken lines with no shading anywhere ; drawing occupies at least half of the space provided ; detail of large leaf with clear midrib and four veins radiating from same point and some branching veins ; detail of both forked tendrils ;	[4]	

	Answer	Mark	Partial Marks
(ii)	*advantage:* grip / attach / climb / support / AW; *disadvantage :* less leaf area / less photosynthesis / AW ;	[2]	
(c)	<table><tr><td>features</td><td>eudicotyledonous</td><td>monocotyledonous</td></tr><tr><td>veins / (named) vascular (tissue)</td><td>network / branching / AW</td><td>parallel / AW ;</td></tr><tr><td>shape / size ;</td><td>broad / wide / AW</td><td>long / thin / elongated / AW ;</td></tr></table>	[3]	
		[Total: 13]	

03.0610_w14_qp_62 Q: 3

<table>
<tr><th></th><th>Answer</th><th>Mark</th><th>Partial Marks</th></tr>
<tr><td>(a)</td><td>
<table>
<tr><th>feature</th><th>male</th><th>female</th></tr>
<tr><td rowspan="3">(end of) abdomen / body /AW</td><td>rounded / blunt / AW</td><td>pointed / AW;</td></tr>
<tr><td>black / dark / AW</td><td>white / light / AW;</td></tr>
<tr><td>short / AW</td><td>long / AW;</td></tr>
<tr><td rowspan="3">bands / stripes (on abdomen / body) /AW</td><td>wide / AW</td><td>thin / AW;</td></tr>
<tr><td>three or four / less</td><td>six or five / more;</td></tr>
<tr><td>dark / black / AW</td><td>white / light /grey / AW;</td></tr>
</table>
two correct features in first column;
correct descriptions in each row, one mark each for any two descriptions;;
</td><td>max 3</td><td>A. comparative answers / presence or absence of features
A. round vs oval</td></tr>
<tr><td>(b)</td><td>one pair of antennae;
wings;</td><td>2</td><td>A compound eyes</td></tr>
</table>

<table>
<tr><th></th><th>Answer</th><th>Mark</th><th>Partial Marks</th></tr>
<tr><td>(c)</td><td>independent variable:
different colours (of flowers / paper / AW);
controlled variables: (max 2)
similar flowers for shape / size / AW;
same type of attraction mechanism / scent / honey guides / nectar / same plant species;
same area (in open) / same number of bees and flies (if in enclosed chamber) / AW;
same time / period;
method:
count / observe / video / film / record the number of visits / AW;
repeats / AW;
handling of data:
calculate average / tally chart / graph / table / AW;
AVP; e.g. a safety point with reference to bees</td><td>max 5</td><td>A only two different colours / named colours
A same paper flowers /shapes</td></tr>
<tr><td></td><td></td><td>[Total: 10]</td><td></td></tr>
</table>

04.0610_s13_qp_63 Q: 2

<table>
<tr><th></th><th>Answer</th><th>Mark</th><th>Partial Marks</th></tr>
<tr><td>(a)</td><td>length of line 10 mm;
formula – ST length ÷ magnification 10 / 2.5;
actual length of leg – 4.0 mm;</td><td>[3]</td><td>A ±1 mm.
A word formula.
3.6, 4.0, or 4.4 mm if line ST is 9, 10 or 11mm.</td></tr>
<tr><td>(b)</td><td>Group – arachnid / arachnida / spiders;
reasons – eight /8 legs / 4 pairs of leg;
two /2 parts to body / cephalothorax and abdomen;</td><td>[3]</td><td>If incorrect group – allow one feature for that group visible in Fig.
Ignore negative features / ref to teeth / 2 segments.
Accept 2 parts to body.</td></tr>
</table>

05.0610_w13_qp_61 Q: 3

	Answer	Mark	Partial Marks
(a) (i)	*Two similar visible features from*: tentacles; foot; unsegmented body / no segments AW;	 [max 2]	**I.** sense organs / eyes / antennae **I.** shape of body **I.** slimy / mucus / soft **I.** no legs
(ii)	*One difference*: shell;	 [1]	**A.** darker **A.** different number tentacles **A.** shiny
(b)	*Any one from:* protection qualified e.g. against predators / (named) environmental factor; prevent desiccation;	 [max 1]	**I.** shelter / hiding alone **A.** waves / wind **A.** camouflage /hiding if qualified e.g. from predators
		[Total: 4]	

06.0610_s12_qp_61 Q: 2

	Answer	Mark	Partial Marks
(a) (i)	**C** ;	[1]	
(ii)	any **two** from small(er); smooth surface ; **no** segments **no** chaetae ;	 Max [2]	
(iii)	annelid(s) / annelida / segmented worm ;	 [1]	**B** annelid but **A** is a myriapod [1] ignore ref to myriapod.
(b)	**Outline:** use of single clear lines for drawing ; **Size:** larger than photograph ; **Detail:** segments / saddle ; **Label:** 1 label mark only ; **one** from: segments / saddle / chaetae or bristles / clitellum ;	 [4]	

	Answer	Mark	Partial Marks
(c) (i)	One in each range to ;; worm / range / cm D 8.2–8.6 C 10.8–11.3 A 11.4–11.9 B 12.2–12.6 E 13.6–13.9	[2]	(worms identified clockwise A to E)
(ii)	range of length / cm / tally / frequency 5.0–6.9 / / 3 7.0–8.9 / +1 / 9 9.0–10.9 / +1 or 0 [if worm C is , 11.0] / 7 or 6 11.0–12.9 / +2 or +3 [if worm C is › 11.0] / 10 or 11 13.0–14.9 / +1 / 8 15.0–16.9 / / 3 tally **method** correct ; frequencies correct ; ;	[3]	ecf from **(c)(i)** Worm C may fall into either of 2 categories. Tally should show the 5 bars correctly i.e. '5 bar gate'.
(iii)	**A** – axes label and scale ; **S** – size to fill at least ½ of grid ; **P** – plot ; **C** – columns touching and equal in width ;	[4]	+/– 1 mm
(iv)	any suitable suggestion, e.g. sexes are different lengths / different ages ;	Max [1]	
		[Total: 18]	

07.0610_w12_qp_61 Q: 3

	Answer	Mark	Partial Marks
(a) (i)	A C	**[2]**	
(ii)	2 from elongated body shape / eyes / scales / no legs or limbs;;	**[2]**	
		[Total: 4]	