

KEYS

1 Crabs are classified, along with prawns, shrimps and lobsters, as crustaceans. Most crabs live in the sea, although some live in freshwater and there are a few land-dwelling crabs.

Fig. 1.1 shows the structure of a typical crab.

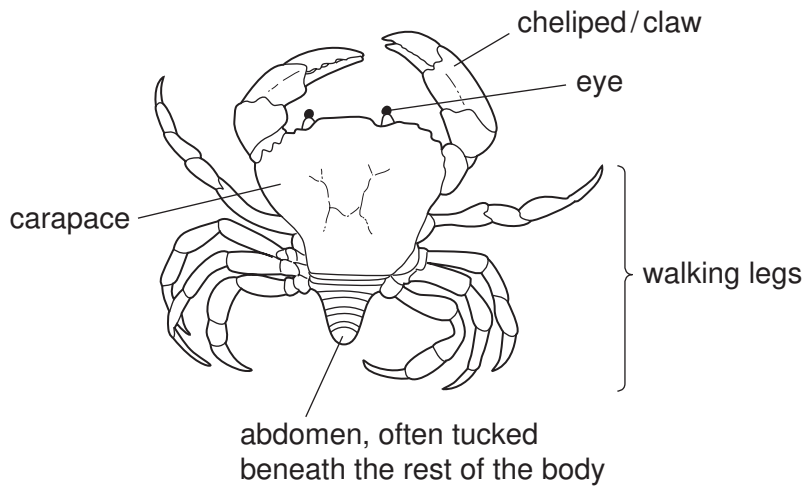
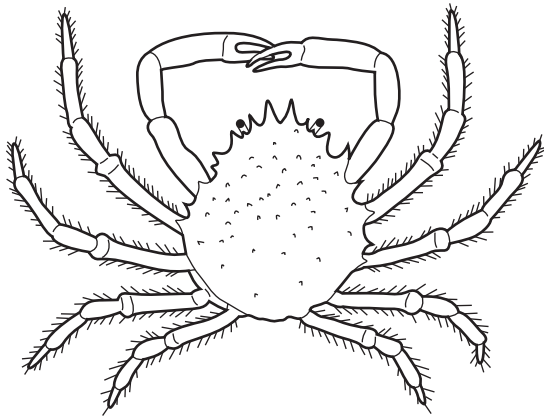


Fig. 1.1

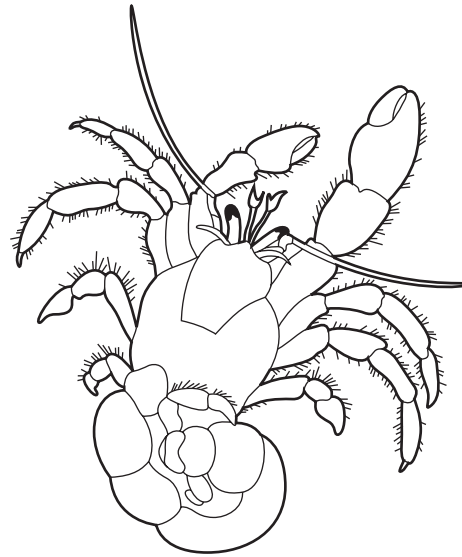
(a) State the group of animals that includes crustaceans, insects, arachnids and myriapods.

..... [1]

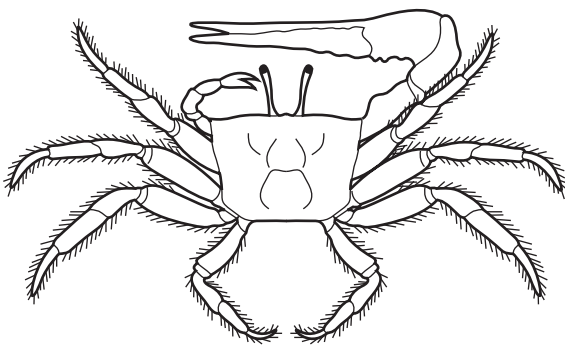
Fig. 1.2 shows four different species of crab.



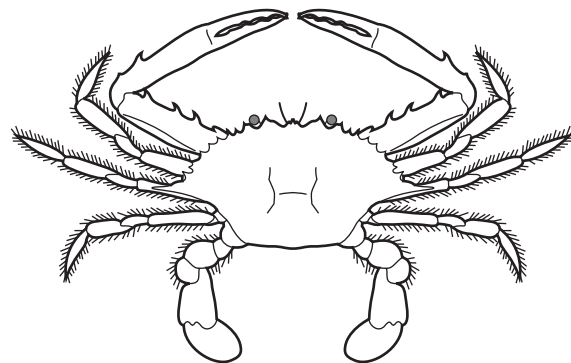
A spiny spider crab
Maia squinado



B hairy hermit crab
Pagurus hirsutiussculus



C West African fiddler crab
Uca tangeri



D sand crab
Portunus pelagicus

Fig. 1.2

(b) Biologists use dichotomous keys to identify different species.

Use Fig. 1.1 and Fig. 1.2 to state **one visible** feature of each species of crab **A**, **B**, **C** and **D**, that could be used in a dichotomous key to identify crabs.

A

.....

B

.....

C

.....

D

..... [4]

MARKSCHEME:

	(a) <u>arthropods/Arthropoda</u> ;	[1]	R 'arthropod'
	<p>(b) A – spiny/oval, carapace/AW ; jagged edge of carapace ; claws same length ; eyes on (short) stalks ;</p> <p>B – long/coiled/soft , abdomen ; abdomen not under carapace ; (long) antennae ; multiple, appendages/mouth parts ; <u>shorter</u> back (walking) legs ; uneven length of, chelipeds/claws/pincer ; hair on claws ; eyes on stalks ;</p> <p>C – uneven length of, chelipeds/claws/pincers ; square/rectangular, carapace ; eyes on (long) stalks ;</p> <p>D – rounded/flattened/less hairy, back/hind (walking) legs ; <u>longer/wider</u> back (walking) legs (compared to other legs) ; jagged edge on claws ; jagged/pointed edge, of carapace ; short antennae ; no eye stalks ; claws same length ;</p>	[4]	<p>A descriptions of carapace/back/'shell' <i>ignore</i> <u>exoskeleton</u> for carapace</p> <p><i>ignore</i> 'tail' for abdomen <i>ignore</i> segmented abdomen</p> <p><i>ignore</i> clamp <i>ignore</i> fur for hair</p> <p>A <u>larger/bigger</u> as BOD (for hind legs)</p>

Expert solution:

(a) The group is arthropods

(b) This is a basic concept based question and can be answered if you have learnt your concepts well.

2

(a) (i) Fig. 1.1 is a branching key used to identify different species of bacteria.

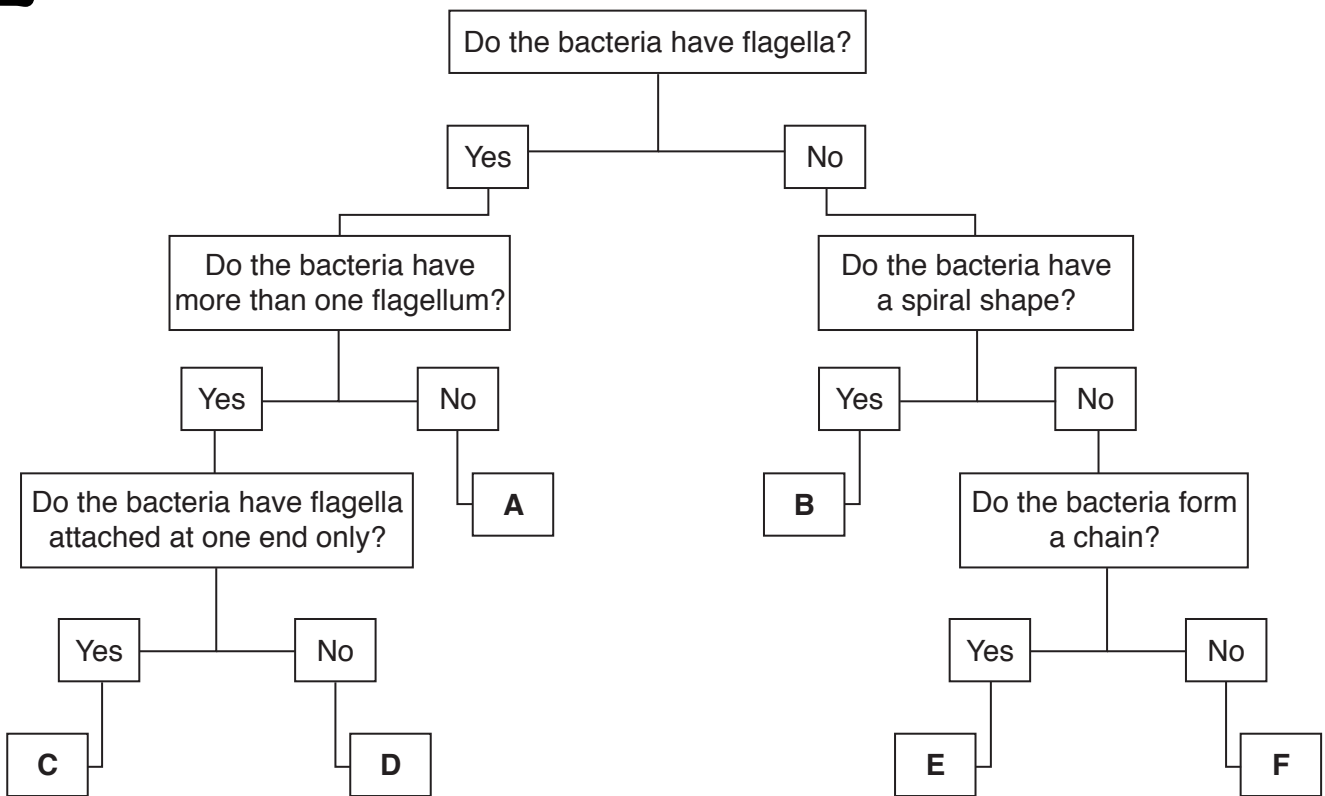
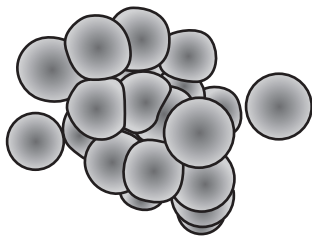


Fig. 1.1

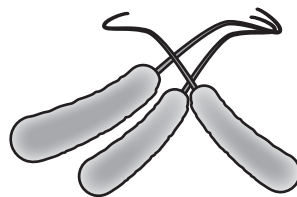
Fig. 1.2 shows six different species of bacteria.

Use the key to identify the six different species of bacteria.

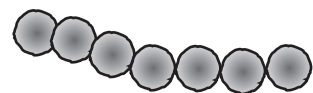
Write the letters on the lines in Fig. 1.2.



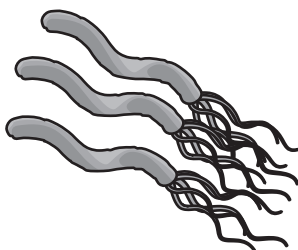
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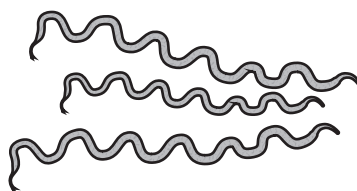
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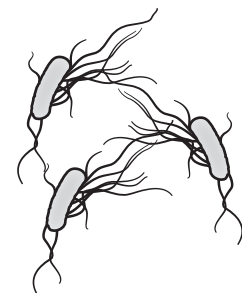
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[5]

MARK SCHEME:

(a)(i)	<i>each row in this order:</i> F A E C B D ; ; ; ;	5	6 correct = 5 marks 4/5 correct = 4 marks 3 correct = 3 marks 2 correct = 2 marks 1 correct = 1 mark
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Expert Solution:

The above features are based on clarity of concepts. Study your concepts well in order to be able to answer the questions.