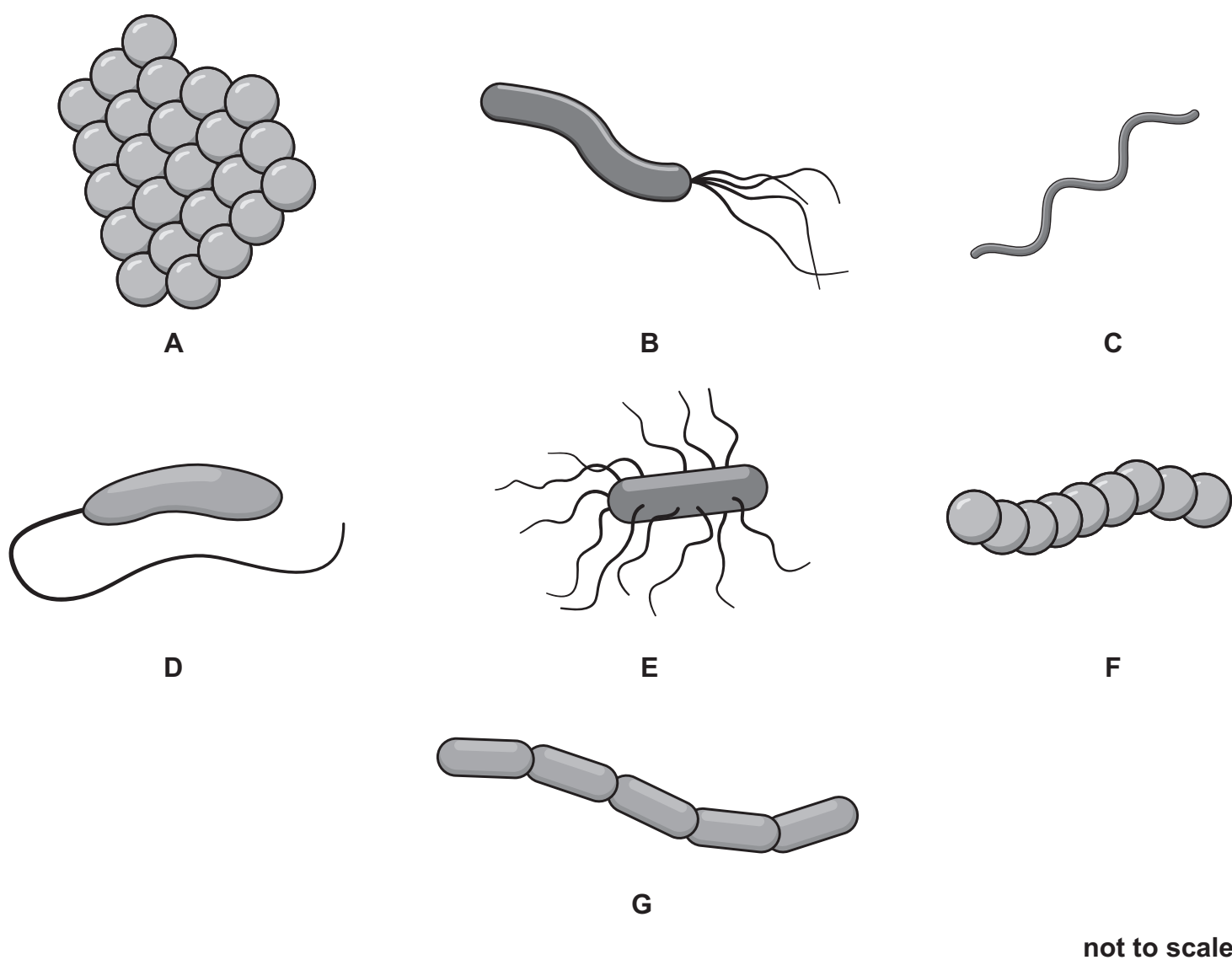


1 (a) Fig. 1.1 shows drawings of seven species of bacteria.



not to scale

Fig. 1.1

Use the key to identify each species of bacteria in Fig. 1.1.

Write the letter of each species (A to G) in the correct box beside the key.

One has been done for you.

key

1	(a)	hair-like structure or structures visible	go to 2	
	(b)	no hair-like structures visible	go to 4	
2	(a)	more than one hair-like structure	go to 3	
	(b)	one hair-like structure only	<i>Vibrio cholerae</i>	
3	(a)	hair-like structures attached at one end only	<i>Helicobacter pylori</i>	
	(b)	hair-like structures attached all over	<i>Salmonella typhi</i>	
4	(a)	bacteria have a spiral shape	<i>Treponema pallidum</i>	
	(b)	bacteria do <b>not</b> have a spiral shape	go to 5	
5	(a)	bacteria are grouped to form a chain	go to 6	
	(b)	bacteria do <b>not</b> form a chain	<i>Staphylococcus aureus</i>	
6	(a)	bacteria in the chain are cylindrical in shape	<i>Streptobacillus moniliformis</i>	
	(b)	bacteria in the chain are circular in shape	<i>Streptococcus pyogenes</i>	<b>F</b>

[3]

(b) (i) A cylinder-shaped bacterium has a length of  $2\mu\text{m}$  and a diameter of  $0.5\mu\text{m}$ .

Calculate:

- the radius of this bacterium
- the volume of this bacterium.

Include the units in your answers.

Space for working.

radius .....

volume .....

[4]

(ii) State the name of the kingdom that bacteria belong to.

..... [1]

(c) Fig. 1.2 is a diagram of a virus.

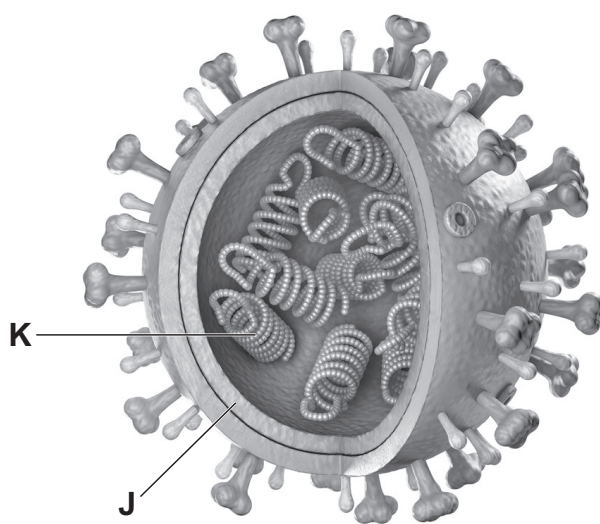


Fig. 1.2

(i) State the name of the parts labelled J and K in Fig. 1.2.

J .....

K .....

[2]

(ii) State **two** structures present in bacteria that are absent in viruses.

1 .....

2 .....

[2]

[Total:12]