Waves – 2020 IGCSE 0625

1. Nov/2020/Paper_11/No.20

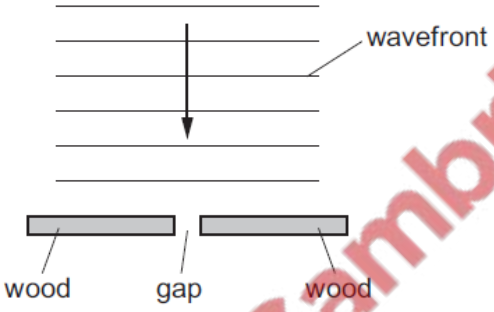
Which row correctly describes light waves?

	wave type	direction of vibrations
A	longitudinal	parallel to direction of wave travel
B	longitudinal	perpendicular to direction of wave travel
C	transverse	parallel to direction of wave travel
D	transverse	perpendicular to direction of wave travel

2. Nov/2020/Paper_11/No.21

The diagram shows two pieces of wood resting in shallow water of constant depth.

Straight, parallel wavefronts approach the pieces of wood as indicated.



The gap between the pieces of wood is 2.0 cm wide.

The wavefronts are 3.0 cm apart.

What is the appearance of the wavefronts after they pass through the gap?

A semicircular and 2.0 cm apart

B semicircular and 3.0 cm apart

C straight and 2.0 cm apart

D straight and 3.0 cm apart

3. Nov/2020/Paper_12/No.20

Which row correctly describes light waves?

	wave type	direction of vibrations
A	longitudinal	parallel to direction of wave travel
B	longitudinal	perpendicular to direction of wave travel
C	transverse	parallel to direction of wave travel
D	transverse	perpendicular to direction of wave travel

4. Nov/2020/Paper_12/No.21

Waves travel across the surface of water.

What is meant by the amplitude of the wave?

A the maximum distance of a water particle from its mean position

B how far the wave travels every second

C the number of waves passing a point every second

D the distance between the top of consecutive waves

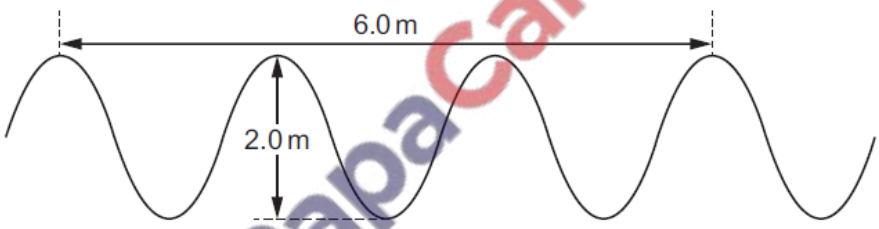
5. Nov/2020/Paper_13/No.20

Which row correctly describes light waves?

	wave type	direction of vibrations
A	longitudinal	parallel to direction of wave travel
B	longitudinal	perpendicular to direction of wave travel
C	transverse	parallel to direction of wave travel
D	transverse	perpendicular to direction of wave travel

6. Nov/2020/Paper_13/No.21

The diagram shows a wave. It is not drawn to scale.



What are the amplitude and the wavelength of the wave?

	amplitude / m	wavelength / m
A	1.0	1.0
B	1.0	2.0
C	2.0	2.0
D	2.0	3.0

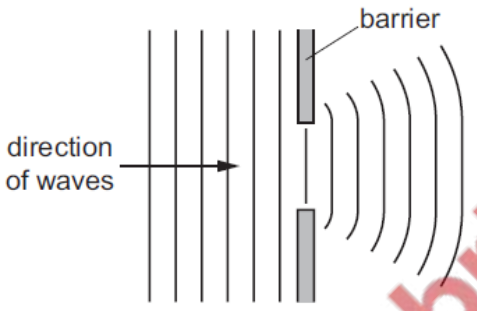
7. Nov/2020/Paper_21/No.21

Which row correctly describes light waves?

	wave type	direction of vibrations
A	longitudinal	parallel to direction of wave travel
B	longitudinal	perpendicular to direction of wave travel
C	transverse	parallel to direction of wave travel
D	transverse	perpendicular to direction of wave travel

8. Nov/2020/Paper_21/No.22

The diagram shows part of a diffracted wave pattern.



Changes are made to the wavelength and to the gap size to produce a semicircular diffracted wave pattern.

Which row produces the required semicircular diffracted wave pattern?

	gap in barrier	wavelength
A	larger	same
B	larger	smaller
C	same	larger
D	same	smaller

9. Nov/2020/Paper_22/No.21

Which row correctly describes light waves?

	wave type	direction of vibrations
A	longitudinal	parallel to direction of wave travel
B	longitudinal	perpendicular to direction of wave travel
C	transverse	parallel to direction of wave travel
D	transverse	perpendicular to direction of wave travel

10. Nov/2020/Paper_23/No.21

Which row correctly describes light waves?

	wave type	direction of vibrations
A	longitudinal	parallel to direction of wave travel
B	longitudinal	perpendicular to direction of wave travel
C	transverse	parallel to direction of wave travel
D	transverse	perpendicular to direction of wave travel

11. Nov/2020/Paper_23/No.22

A water wave has a speed of 2.0 m / s.

4.0 complete waves pass a point every 10 seconds.

What is the wavelength of the wave?

A 0.50 m **B** 0.80 m **C** 5.0 m **D** 8.0 m

12. Nov/2020/Paper_31/No.2

Fig. 2.1 shows a beaker containing liquid on a top pan balance.

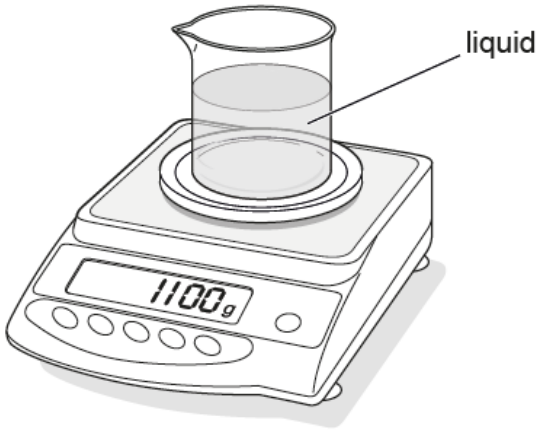


Fig. 2.1

The mass of the empty beaker is 400 g.

(a) Using the information in Fig. 2.1, determine the mass of the liquid in the beaker.

mass = ... g [1]

(b) The beaker contains 750 cm^3 of liquid.

Calculate the density of the liquid.

density = ... g/cm^3 [3]

(c) Calculate the weight of the empty beaker.

weight = ... N [4]

[Total: 8]

13. Nov/2020/Paper_32/No.7

A teacher uses a long spring to demonstrate wave motion. She makes a wave move along the coils of the spring.
Fig. 7.1 shows the wave on the spring.

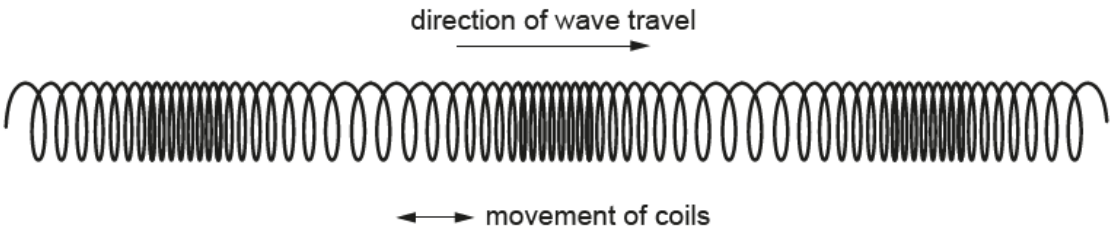


Fig. 7.1

(a) Explain why the type of wave in Fig. 7.1 is a longitudinal wave.

.....

..... [2]

(b) Measure the wavelength of the wave shown in Fig. 7.1.

wavelength = ... cm [1]

(c) State what is meant by the frequency of a wave.

.....

..... [2]

(d) The wave in Fig. 7.1 travels 25 cm in 0.20 s.

Calculate the speed of the wave.

speed = ... cm/s [3]

[Total: 8]

14. Nov/2020/Paper_42/No.6

Fig. 6.1 shows a transverse wave produced in a string.

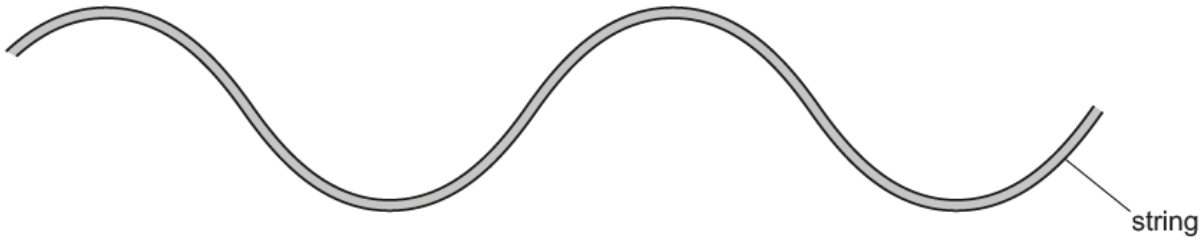


Fig. 6.1 (full size)

(a) On Fig. 6.1:

(i) draw labelled lines to show

1. the amplitude of the wave

2. the wavelength of the wave

[2]

(ii) label a trough with the letter T. [1]

(b) A person vibrates one end of the string vertically to produce the wave. He makes 15 complete oscillations in 60 s.

Show that the speed of the wave is 2.0 cm / s.

[3]

(c) State the difference between transverse waves and longitudinal waves. Use your ideas about the direction of oscillations.

transverse waves .....

.....

longitudinal waves .....

.....

[2]

[Total: 8]

15. Nov/2020/Paper_41/No.6

Fig. 6.1 shows a shallow tank viewed from above. The depth of the water is different in the two parts of the tank. Fig. 6.1 shows the crests and the troughs of a wave that pass from left to right.

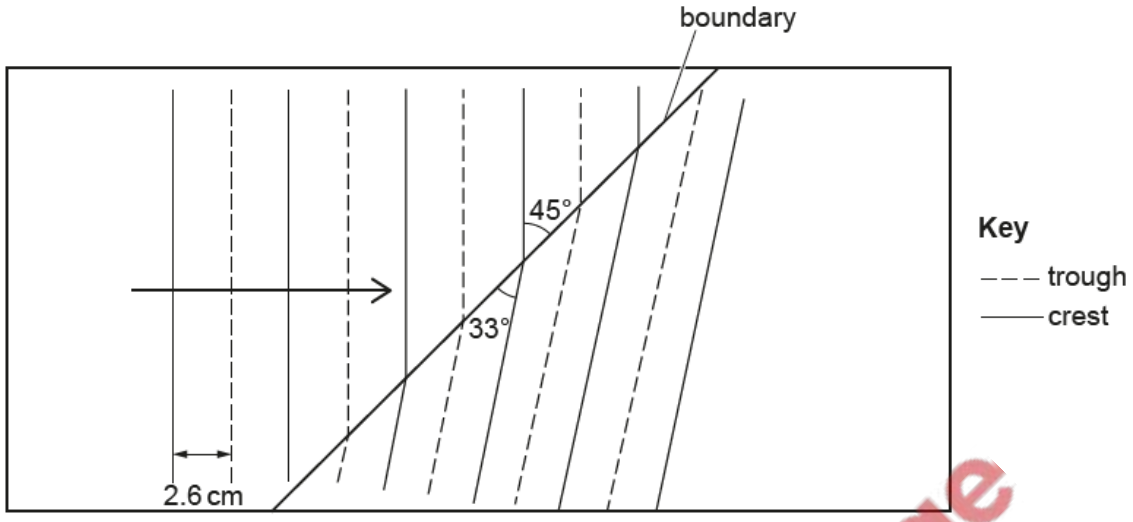


Fig. 6.1 (not to scale)

As the wave passes from one side to the other, the direction of the wavefronts changes.

(a) Explain why the direction of the wavefronts changes in the way shown in Fig. 6.1.

.....

.....

.....

.....

..... [3]

(b) The speed of the wave in the left-hand part of the tank is 0.39 m/s.

(i) Using information from Fig. 6.1, determine the frequency of the wave.

frequency = ... [3]

(ii) Determine the speed of the wave in the right-hand side of the tank.

speed = ... [3]

[Total: 9]