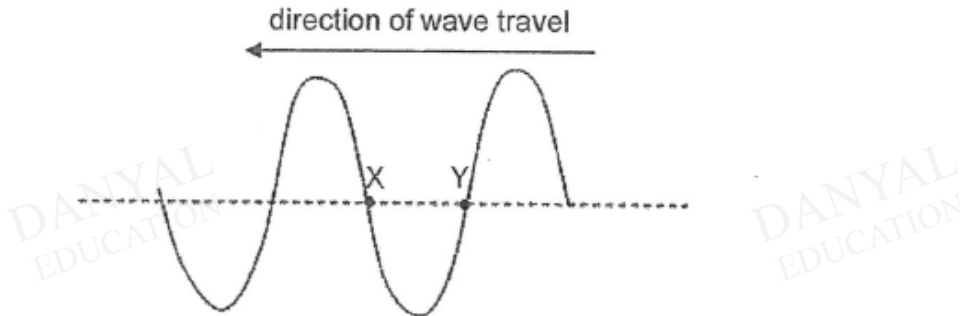


O Level Combined Physics MCQs

General Wave Properties Test 1.0

Q1

A transverse wave travels steadily from right to left as shown below.

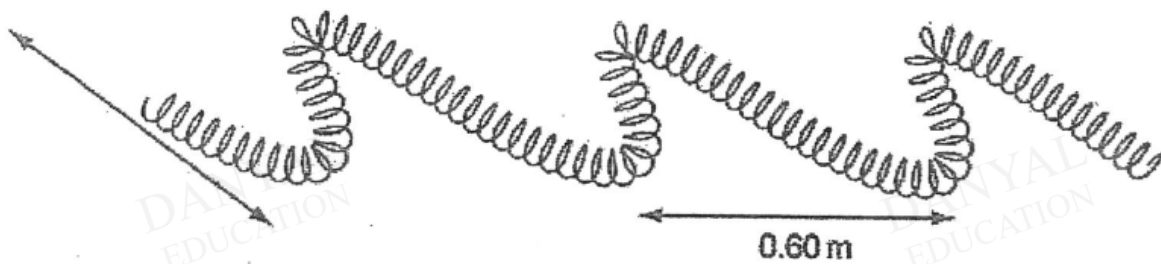


Which row shows the directions of movement of the particles X and Y correctly?

	X	Y
A	downwards	upwards
B	upwards	downwards
C	to the left	to the right
D	to the right	to the left

Q2

The diagram shows part of a spring that is shaken from side to side to produce a wave.



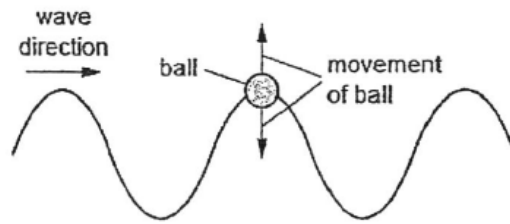
The distance between successive peaks is 0.60 m and the frequency is 2.5 Hz.

How long does it take for a wave to travel 3.0 m along the spring?

- A 0.20 s B 0.50 s C 2.0 s D 5.0 s

Q3

A ball floating in a ripple tank begins to move vertically up and down as a wave passes beneath it. The ball does not move horizontally.

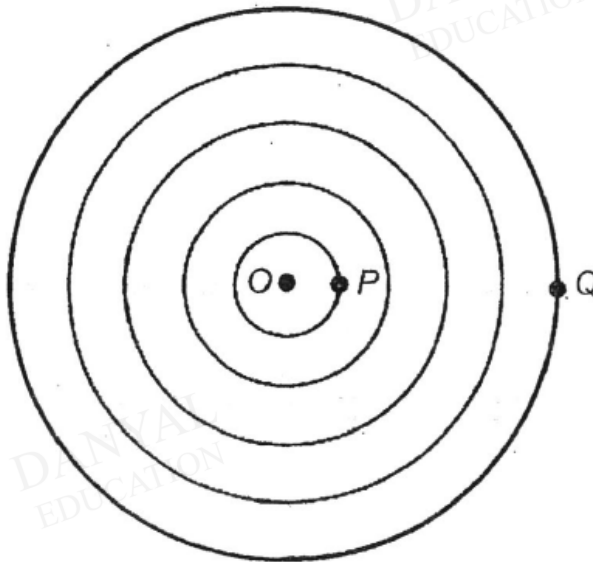


Which of the following statements is correct?

- A Both energy and water are transferred in the wave direction.
- B Neither energy nor water is transferred in the wave direction.
- C Energy is not transferred in the wave direction but water is.
- D Energy is transferred in the wave direction but water is not.

Q4

The diagram illustrates crests of circular wavefronts moving from a point source O.

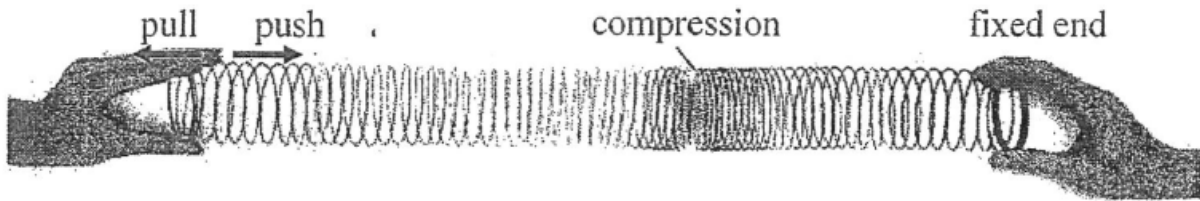


Given that the time taken for a wavefront to travel from P to Q is 5 s, and the wavelength of the waves is 2 m. What is the speed of the wave?

- A 0.2 m/s
- B 0.8 m/s
- C 1.6 m/s
- D 40 m/s

Q5

One end of a long spring is moved backwards and forwards to produce a model of a wave.

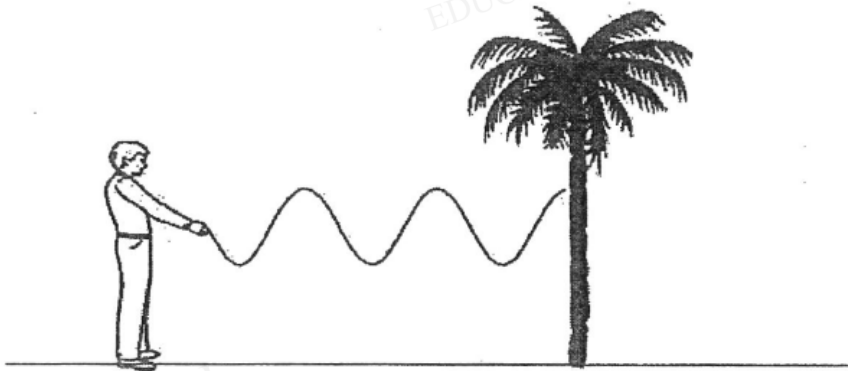


What is this type of wave called, and what is a good example of it?

	Type of wave	Example
A	Transverse	Radio wave
B	Transverse	Sound wave
C	Longitudinal	Radio wave
D	Longitudinal	Sound wave

Q6

The diagram shows a student setting up waves on a long elastic chord tied to a tree a distance away.

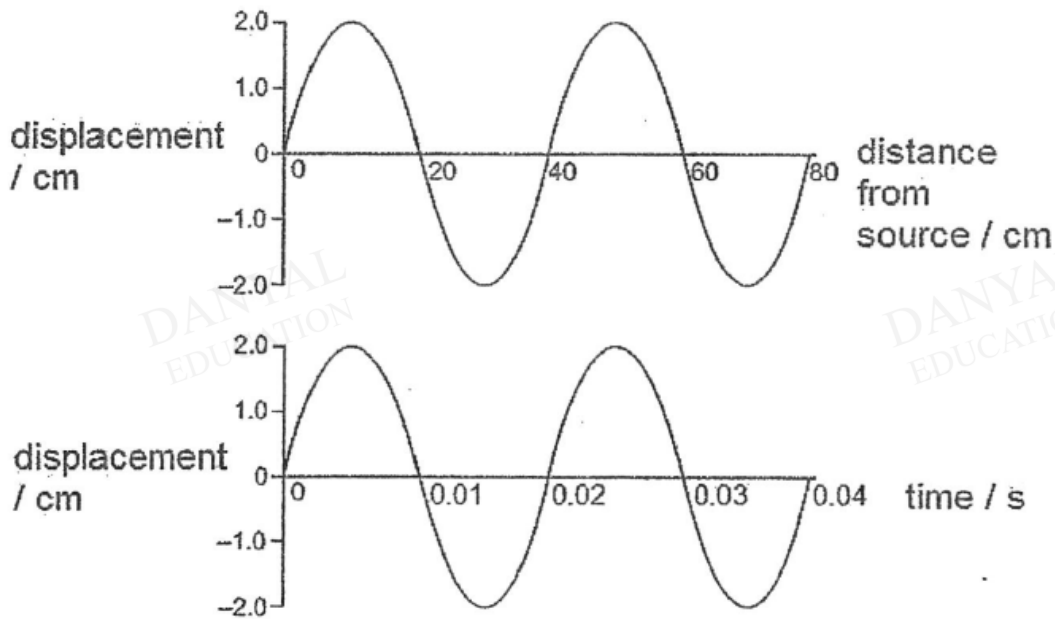


If he uses the same energy but increases his frequency of vibration, which of the following is correct?

	wavelength	amplitude	speed
A	unchanged	increases	increases
B	decreases	unchanged	increases
C	decreases	unchanged	unchanged
D	increases	decreases	increases

Q7

The displacement-distance and displacement-time graphs are shown for a water wave in an ocean.



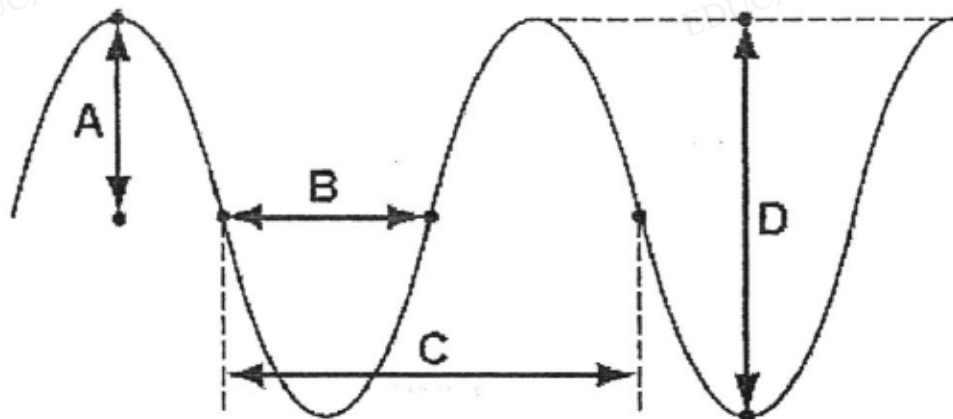
What is the speed of the water wave?

- A 100 cm/s
- B 1 000 cm/s
- C 2 000 cm/s
- D 4 000 cm/s

Q8

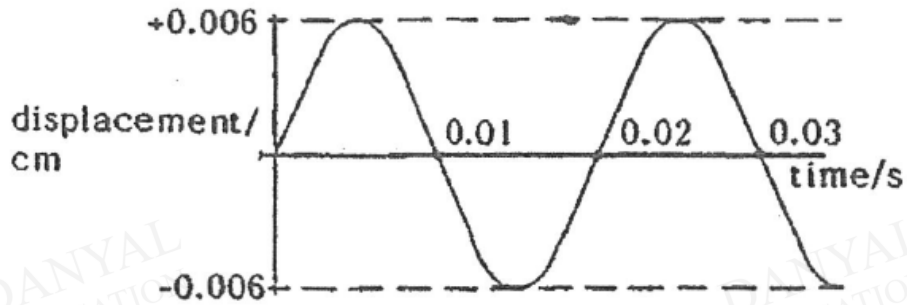
The drawing shows a wave.

Which labelled distance represents the amplitude of the wave?



Q9

Below is a graph that shows the displacement of a particle on the surface of a liquid by a passage of waves. The speed of these waves is 2 cm/s.



What are the correct figures for the amplitude and the wavelength?

	Amplitude in cm	Wave length in cm
A	0.04	0.012
B	0.04	0.006
C	0.02	0.006
D	0.012	0.04

Q10

Five balls are floating in the sea.

Fig. 16.1 shows the positions of the balls from above.

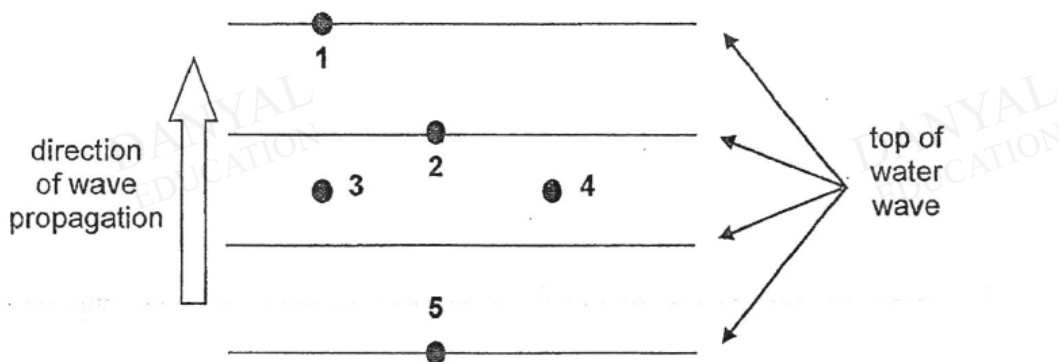


Fig. 16.1

Which balls are on the same wavefront?

- A 1, 2 and 5 B 1 and 3 C 2 and 5 D 3 and 4

Answers

General Wave Properties Test 1.0

Q1 A

Q2 C

Q3 D

Q4 C

Q5 D

Q6 C

Q7 C

Q8 A

Q9 B

Q10 D

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