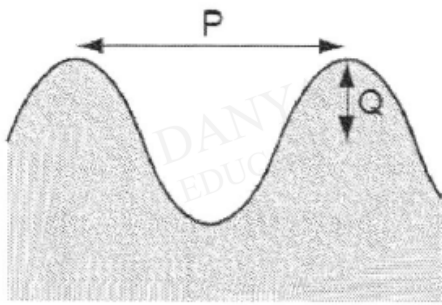


**O Level Pure Physics MCQs**

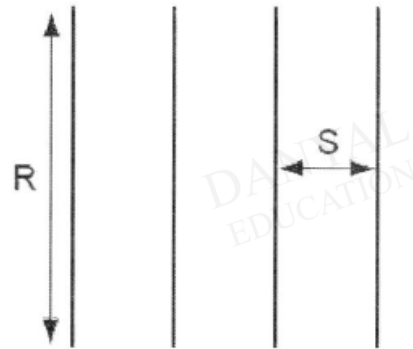
**General Wave Properties Test 3.0**

Q1

The diagrams show different views of a water wave in a ripple tank.



cross-section of wave



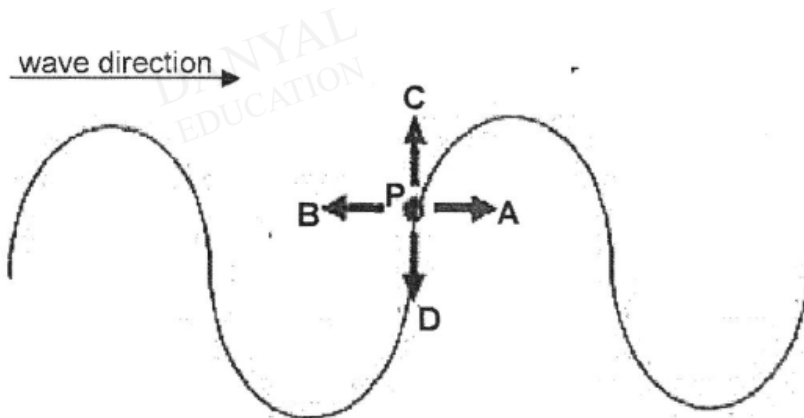
crests seen from above

Which letters represent a wavelength and a wavefront?

	wavelength	wavefront
A	P	R
B	P	S
C	Q	R
D	Q	S

Q2

A point P is marked on the rope before the rope is set to oscillate. At the particular instance shown below, what is the direction in which point P moves?



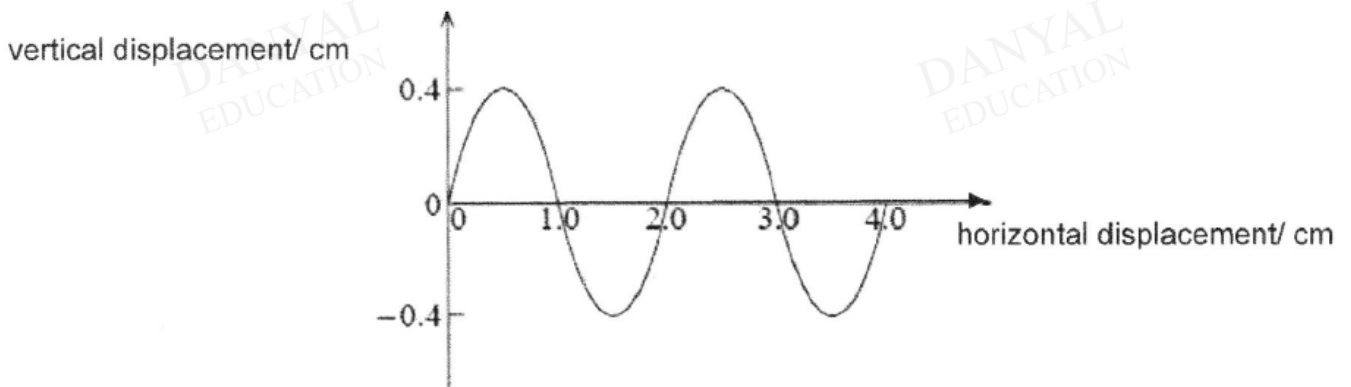
Q3

A total of 16 wave crests pass through a point in the sea in a minute. The distance between two successive wave crests is 1.0 m. What is the speed of the wave?

- A 0.23 m/s      B 0.25 m/s      C 0.27 m/s      D 0.30 m/s

Q4

A source produces water waves of frequency 10 Hz. The graph shows the variation with horizontal position of the vertical displacement of the surface of water at one instant in time.



What is the speed of the water waves?

- A 0.20 cms<sup>-1</sup>  
B 4.0 cms<sup>-1</sup>  
C 10 cms<sup>-1</sup>  
D 20 cms<sup>-1</sup>

Q5

Diagram 1 below shows the displacement of part of a medium through which a wave is travelling at time  $t = 0$ . Diagram 2 shows the displacement at a later time  $t = 4.0$  s in which the wave has moved forward 10 cm. In this time, the point P on the wave has moved from a crest through zero displacement to a trough.

Diagram 1



Diagram 2



What is the wavelength of the wave?

- A 5.0 cm  
B 10 cm  
C 20 cm  
D 40 cm

Q6

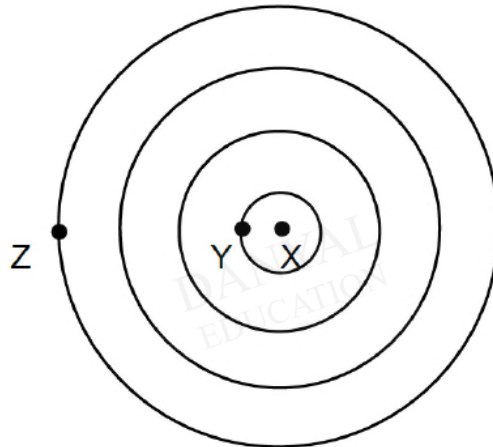
A wave travels from one medium to another.

Which of the following is true about its frequency and wavelength?

	Frequency	Wavelength
A	no change	no change
B	change	no change
C	no change	change
D	change	change

Q7

A spherical dipper of frequency 15 Hz is placed at X, and circular wavefronts radiate from X to Z as shown.

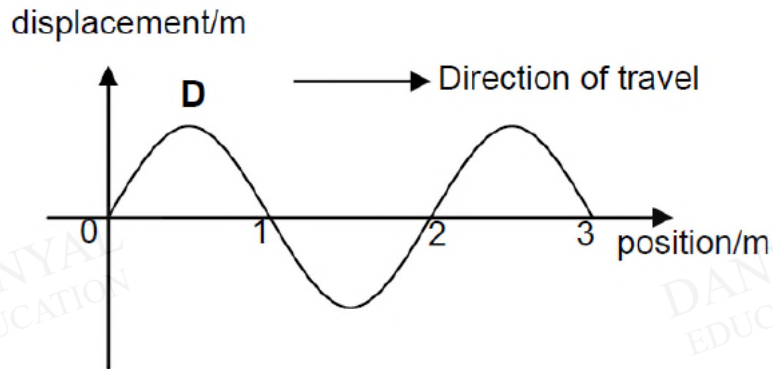


Give that the distance between Y and Z is 1.2 m, what is the speed of the wave?

- A** 4.5 m/s      **B** 6.0 m/s      **C** 13 m/s      **D** 18 m/s

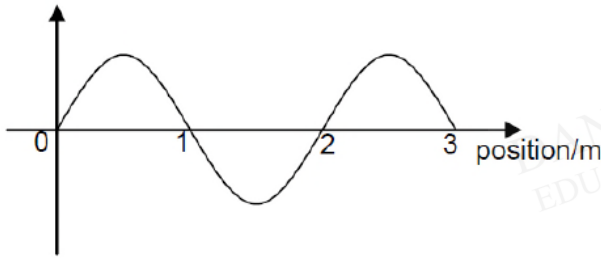
Q8

The diagram shows the displacement-position graph of a transverse wave at  $t = 0$  s as it travels from left to right. The wave has a period  $T$ .

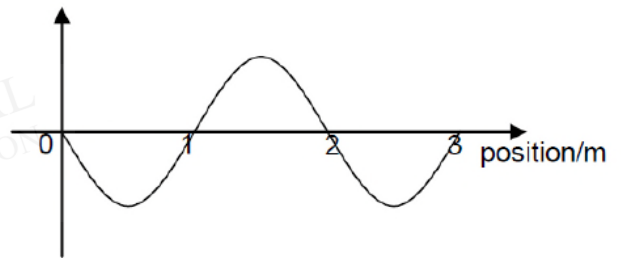


Which of the following graphs correctly shows how the transverse wave would look like at  $t = 0.25T$ ?

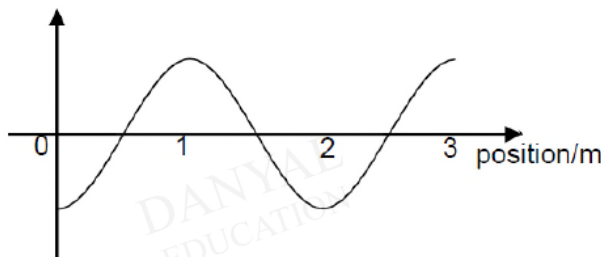
**A**  
displacement/m



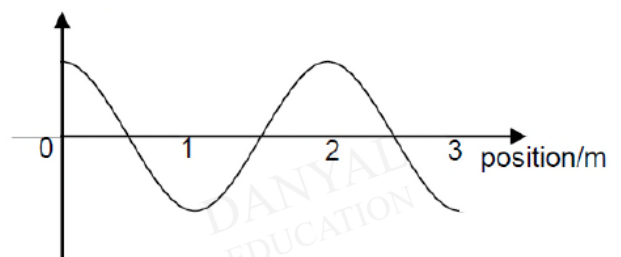
**C**  
displacement/m



**B**  
displacement/m

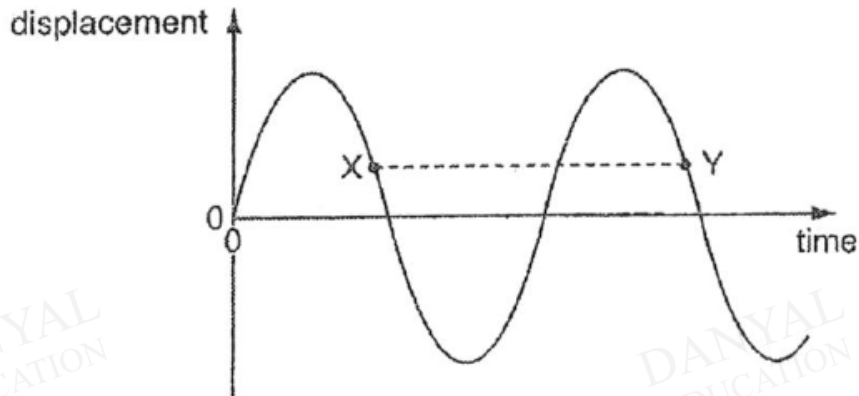


**D**  
displacement/m



Q9

The diagram shows a graph of wave motion.



The separation XY on the graph represents .....1..... of the wave.

X and Y have equal .....2..... .

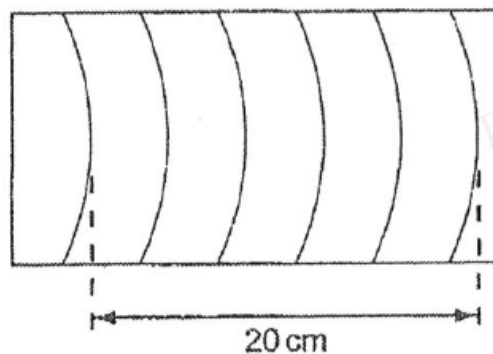
Which words correctly complete 1 and 2?

	1	2
<b>A</b>	period	wavefronts
<b>B</b>	period	displacements
<b>C</b>	wavelength	wavefronts
<b>D</b>	wavelength	displacements

Q10

A dipper in a ripple tank vibrates at a frequency of 4.0 Hz and the resulting wave pattern is photographed.

The distance between the two crests shown is 20 cm.



What is the speed of the wave?

- A** 4 cm/s      **B** 5 cm/s      **C** 16 cm/s      **D** 20 cm/s

**Answers**

**General Wave Properties Test 3.0**

Q1 A

Q2 D

Q3 C

Q4 D

Q5 C

Q6 C

Q7 B

Q8 B

Q9 B

Q10 C

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