

24 Which microorganisms have a length that is equal to the wavelength in free space of an electromagnetic wave that is visible to the human eye?

- A** algae of length $0.5\text{ }\mu\text{m}$
- B** bacteria of length $5.0\text{ }\mu\text{m}$
- C** fungi of length $50\text{ }\mu\text{m}$
- D** protozoa of length $100\text{ }\mu\text{m}$

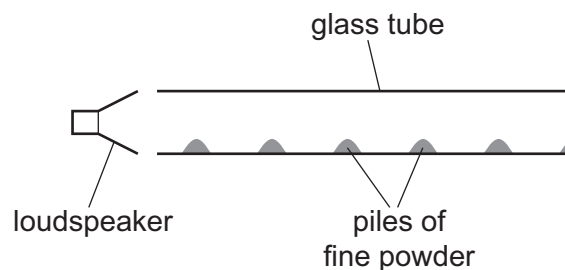
25 Two progressive waves overlap.

What is an essential condition for the two waves to form a stationary wave?

- A** The waves are longitudinal.
- B** The waves are polarised.
- C** The waves travel in opposite directions.
- D** The waves travel in the same direction.

26 In an experiment to produce a stationary sound wave in air, a fine powder is initially evenly distributed along the length of a horizontal glass tube which is closed at one end.

At the open end of the tube, a loudspeaker emits a sound wave of a constant wavelength. A stationary wave is formed and the powder accumulates in regularly spaced piles, as shown.



Which statement explains the positions of the piles of powder within the tube?

- A** The piles are where the air molecules vibrate with maximum amplitude.
- B** The piles are where the air molecules vibrate with minimum amplitude.
- C** The piles are where the air molecules vibrate with the highest frequency.
- D** The piles are where the air molecules vibrate vertically.