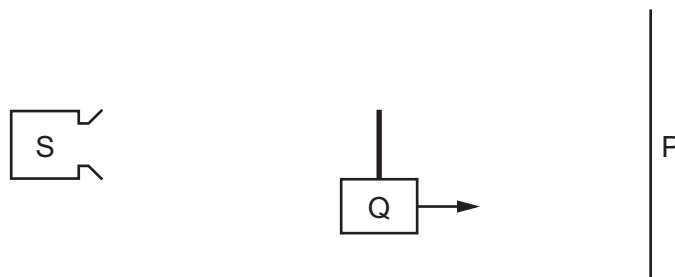


- 23** Source S emits microwaves with a constant amplitude. The microwaves hit a metal screen P and are reflected. A stationary wave is formed between S and P. The wavelength of the microwaves is much smaller than the distance between S and P.



A detector Q is moved at a slow, constant speed from S to P.

What happens to the amplitude of the signal detected by Q?

- A** decreases steadily
 - B** increases and decreases regularly
 - C** increases steadily
 - D** remains constant
- 24** The siren of a moving police car emits a sound wave with a frequency of 440 Hz. A stationary observer hears sound of frequency 494 Hz. The speed of sound in the air is 340 m s^{-1} .

What could be the speed and the direction of movement of the car?

- A** 37 m s^{-1} directly towards the observer
 - B** 37 m s^{-1} directly away from the observer
 - C** 42 m s^{-1} directly towards the observer
 - D** 42 m s^{-1} directly away from the observer
- 25** An electromagnetic wave has a wavelength of 138 pm in a vacuum.

To which region of the electromagnetic spectrum does this wave belong?

- A** radio wave
- B** microwave
- C** visible light
- D** X-ray