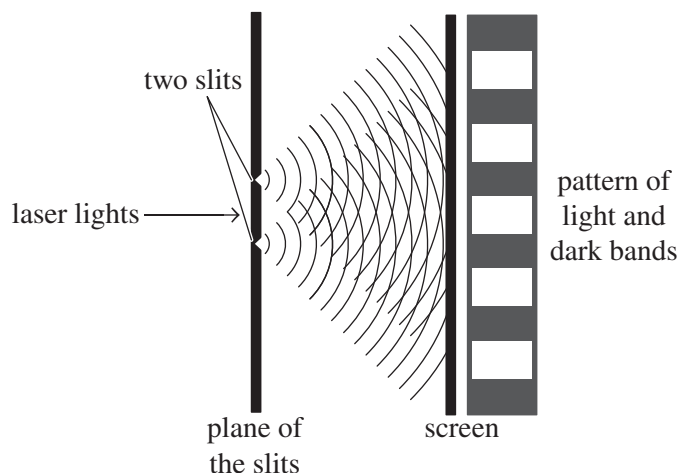


Question 17

Young's double-slit experiment is performed as shown in the diagram below.



The experiment is repeated whereby the pattern of light and dark bands are now produced further apart. Which one of the following represents the possible change to the parameters that would give this result?

- A. Light of lesser frequency was used.
- B. The plane of the slits was brought closer to the screen.
- C. The two slits were moved further apart.
- D. The laser light was made more intense.

Question 18

A photon and an electron both have a wavelength of 2.0×10^{-10} m.

Which one of the following is correct?

- A. The electron and photon have the same momentum but the photon has more energy.
- B. The electron and photon have the same momentum but the photon has less energy.
- C. The electron and photon have the same energy but the photon has more momentum.
- D. The electron and photon have the same energy but the photon has less momentum.

Question 19

A group of students undertake an experiment to measure the refractive index of water. Their results conclude the refractive index to be $[1.35 \pm 0.15]$.

The accepted value of the refractive index of water is 1.33.

Which one of the following is correct regarding the uncertainty and the error of the result?

	Error	Uncertainty
A.	0.02	0.02
B.	0.02	0.15
C.	0.15	0.02
D.	0.15	0.15