6 **(a)** State one difference and one similarity between longitudinal and transverse waves.

difference: .....

.....

similarity: .....

.....

[2]

(b) A laser is placed in front of two slits as shown in Fig. 6.1.

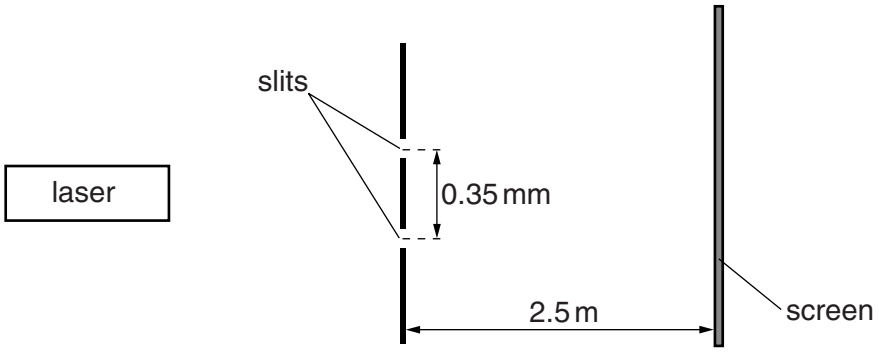

Fig. 6.1 (not to scale)

The laser emits light of wavelength 6.3×10^{-7} m.
The distance from the slits to the screen is 2.5 m. The separation of the slits is 0.35 mm.
An interference pattern of maxima and minima is observed on the screen.

(i) Explain why an interference pattern is observed on the screen.

.....

.....

.....

.....[2]

(ii) Calculate the distance between adjacent maxima.

distance = ...m [2]

(c) State and explain the effect, if any, on the distance between adjacent maxima when the laser is replaced by another laser emitting ultra-violet radiation.

.....

.....[1]