



A Level Physics A

H556/02 Exploring physics

Question Set 3

1 (a) State the *principle of superposition* of waves.

[1]

(b) Fig. 16.1 shows an arrangement to demonstrate the interference of monochromatic light.

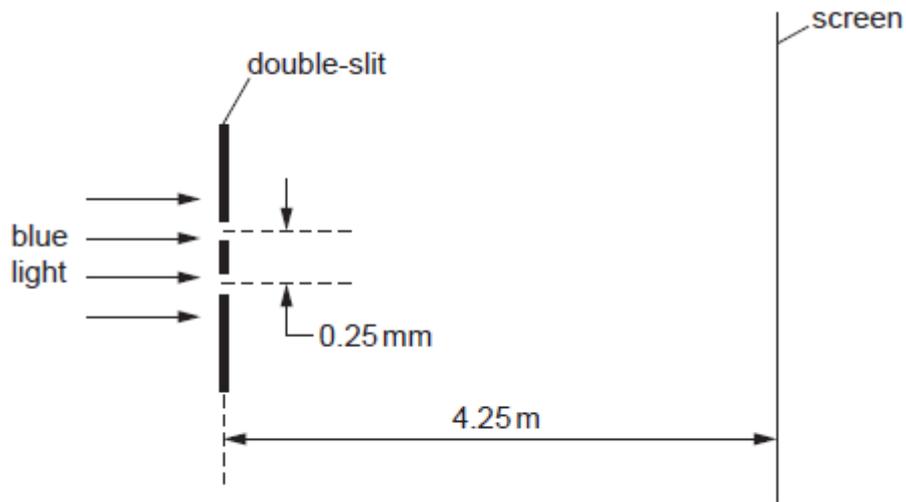


Fig. 16.1

Coherent blue light from a laser is incident at a double-slit. The separation between the slits is 0.25 mm. A series of dark and bright lines (fringes) appear on the screen. The screen is 4.25 m from the slits.

Fig. 16.2 shows the dark and bright fringes observed on the screen.

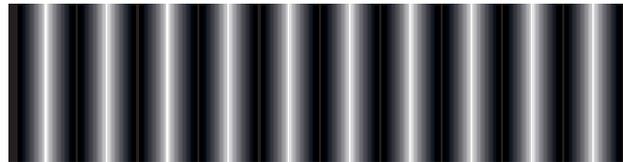


Fig. 16.2

The pattern shown in Fig. 16.2 is **drawn to scale**.

(i) Use Fig. 16.2 to determine accurately the wavelength of the blue light from the laser.

wavelength = m [3]

(ii) The blue light is now replaced by a similar beam of red light. State and explain the effect, if any, on the fringes observed on the screen.

[2]

Total Marks for Question Set 3: 6

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