

9.2 The fringe spacing Δy is given by

from the above relation, we can see that the fringe spacing is inversely proportional to the separation between slits when slit separation "d" increases, the fringe spacing Δy decreases.

Yes, fringes can disappear when the slit separation increases. Fringes will become very close to each other and seem to disappear creating a ray of light.

9.3:

Yes, visible light can produce interference fringes because a visible light contains seven colours that can perform interference.

9.4:

In the Young's experiment, one of the slits is covered with blue filter and other with red filter.

then sources will not be coherent. So far therefore the bright and dark fringes will not be created. There would be blue and red beams of light on the screen.

9.5:

Young's double slit experiment is basically for studying to interference effects of light. ^{cause} because the light rays coming from two sources interfere each other to produce dark and bright fringes on the screen.

Passes more over, when the light passes through slits, it bends a long the edges so we can also examine the phenomenon of diffraction.

9.7:

Yes, we can obtain Newton's rings with transmitted light but its pattern would be reversed as that of reflected light. The center

spot of the Newton rings will become bright.

q.9:

for the diffraction grating

$$d \sin \theta = n \lambda$$

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To get more orders of spectra

(i) The angle should be $\theta = 90^\circ$

(ii) The light of shorter wave length should be used.

(iii) The grating element should be large.