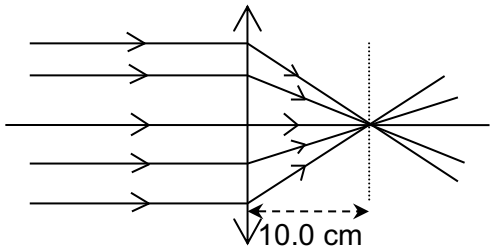
2021 Sec 3 Physics Assignment Answers
Assignment 4.2 Lens Formulae **Total = 15**

1 (a) It means that rays parallel to the principal axis will [1]
meet 10.0 cm away from the centre of the lens measured along the principal axis. [1]

diagram [1]



(i) 1/10.0 = 1/12.5 + 1/v
v = 50.0 cm [2]

(ii) Magnification = hi / ho = v / u

H = 25 x (50.0/12.5)
= 100 mm [2]

2 1/f = 1/50 + (-1/150) [2]
f = 75 mm

3 (a) (i) real
1/150 = 1/u + 1/3u
u = 200 mm [2]

(ii) virtual.

If we take u as positive (which is always the case), v = -3u

1/150 = 1/u - 1/3u
u = 100 mm [2]

(b) 1. Move the object further from the lens (u>2f ie u>300mm to get a smaller image) [1]

2. Move the screen closer to the lens. [1]