**Q3.**A parallel beam of light is incident on a plane transmission grating having 3000 lines/cm. A third order diffraction is observed at 30®. calculate the wavelength of the line.

**Given**:-a+b = 1/3000 ; n=3 ; =30

**Formula:-** , n=1,2,3…

**Solution:-** =

=

= = 5.555×10-5 cm

**Ans:- The wavelength of the line is 5.555×10-5 cm.**