

PHYSICS – 201
(Term 061)
QUIZ # 6

Instructor: Dr. Al-Solami

Student's Name _____ ID # _____ Sec _____

Q. 1 In a double slit experiment, the wavelength of the light is 650 nm, the slit separation is $20\mu\text{m}$ and the slit width is $2\mu\text{m}$. Consider the interference of the light from the two slits and also the diffraction of the light through each slit. How many bright fringes you can see within the central diffraction envelope?

Q. 2 A diffraction grating has 1.35×10^4 rulings spaced over a width $W=25.4\text{mm}$. It is illuminated by a helium neon laser light, $\lambda=600\text{ nm}$ at normal incidence.

- a) At what angle does the second order maximum occur?
- b) What is the highest order that can be observed with this grating using the helium neon light