

Unit 12 - Week 10

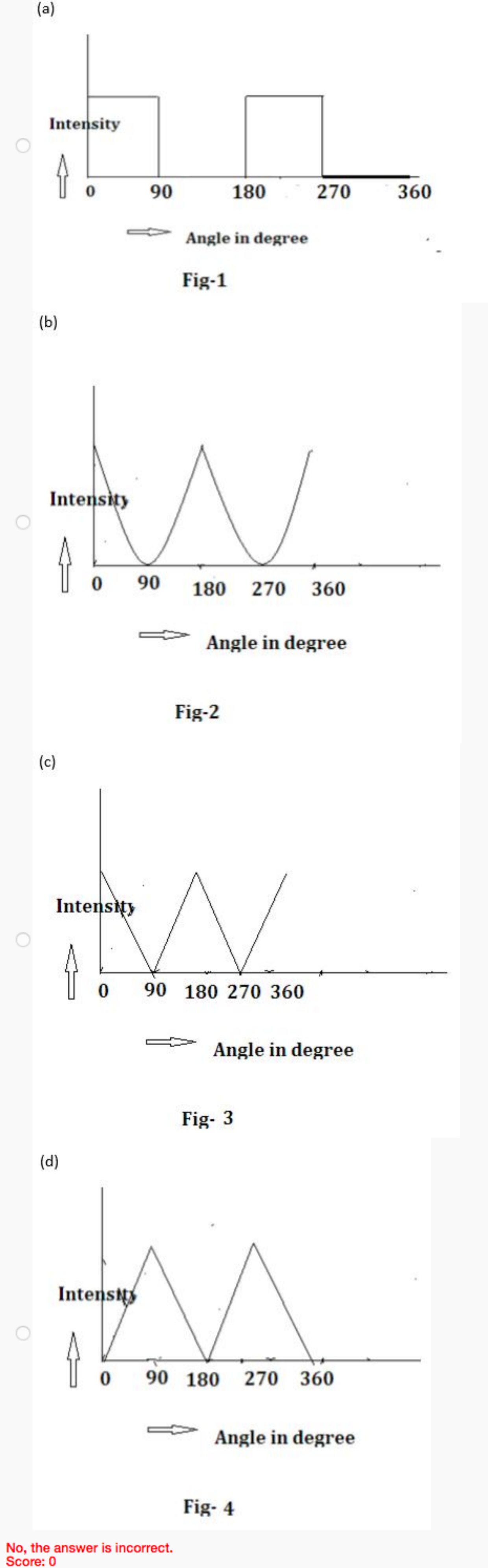
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Assignment 10

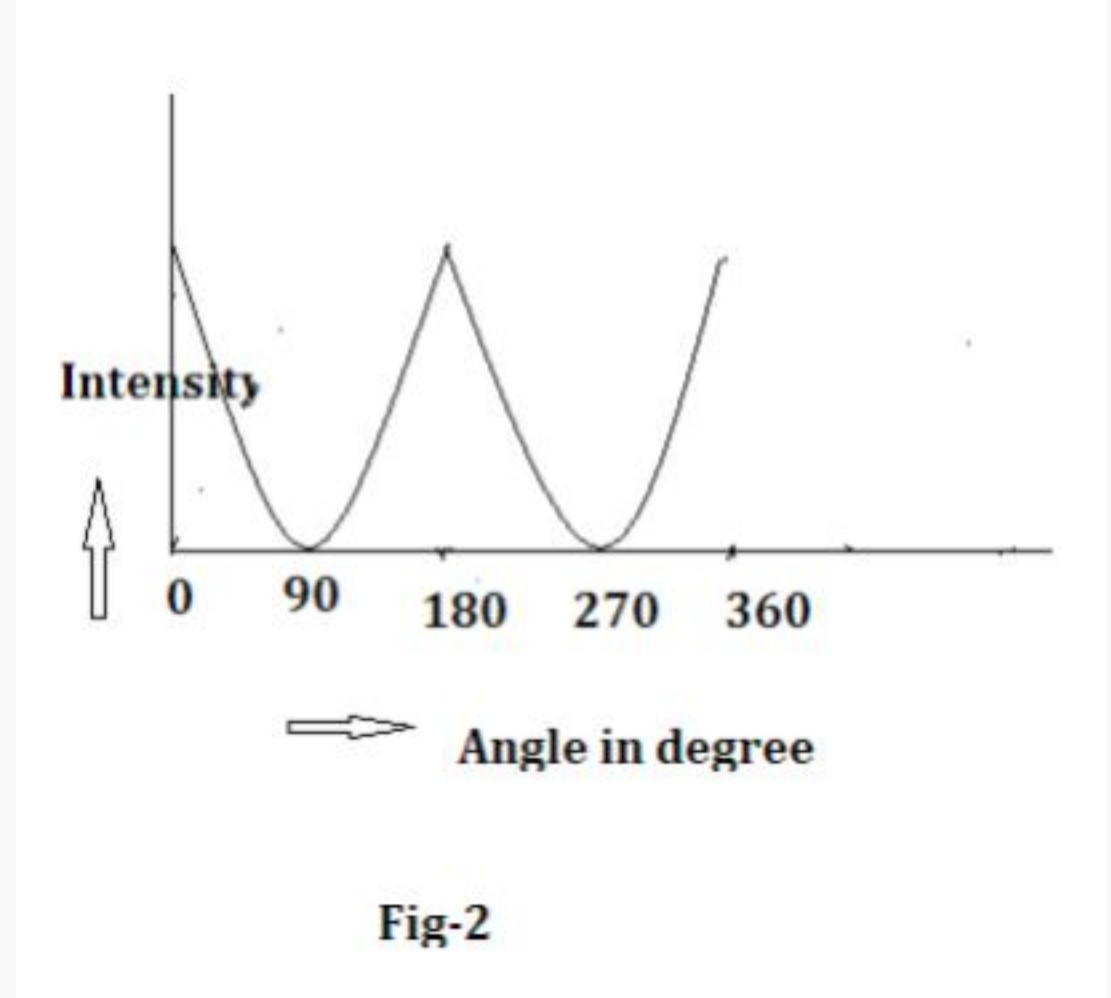
The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-10-09, 23:59 IST.

- 1) If wavelength is measured in Å and angle in radian, then the dispersive power of grating is in 1 point
- (a) $1/\text{Å}$
 (b) $1/\text{radian}$
 (c) $\text{radian}/\text{Å}$
 (d) $\text{Å}/\text{radian}$
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: c
- 2) The resolving power of grating is: 1 point
- (a) Total number of lines in the grating (N) multiplied with wavelength of light (λ)
 (b) Total number of lines in the grating (N) multiplied with order number of spectrum (n)
 (c) Wavelength of light (λ) multiplied with order number of spectrum (n)
 (d) None of those
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: b
- 3) A plane transmission grating gives an angle of diffraction of a line to be 30° in the first order, for a wavelength of 6000 Å . Find the number of lines per cm of the grating. 1 point
- (a) 5640
 (b) 8700
 (c) 7645
 (d) 8333
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: d
- 4) What is the highest order of spectrum which may be seen with a light of wavelength 5000 Å by means of grating with 4000 lines/cm ? 1 point
- (a) 2
 (b) 4
 (c) 5
 (d) 8
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: c
- 5) The transverse nature of light is satisfactorily established by: 1 point
- (a) Reflection of light
 (b) Refraction of light
 (c) Interference of light
 (d) Polarization of light
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: d
- 6) A narrow slit is illuminated by a parallel beam of monochromatic light of wavelength λ equals to 6000 Å and the angular width of the central maxima in the resulting diffraction pattern is measured. When the slit is next illuminated by light of wavelength λ' , the angular width decreases by 30%. Calculate the value of the wavelength λ' . 1 point
- (a) 4200 Å
 (b) 4800 Å
 (c) 5600 Å
 (d) 6200 Å
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: a
- 7) There are two sets of apparatus of Young's double slit experiment. In set A, the phase difference between the two waves emanating from the slits does not change with time, whereas in set B, the phase difference between the two waves from the slits changes rapidly with time. 1 point
- The ratio of the resultant intensity in set-A (for constructive interference) to that of set-B, assuming that the waves emanating from the two slits have the same amplitude and same wavelength is:
- (a) 1:3
 (b) 1:2
 (c) 2:1
 (d) 3:2
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: c
- 8) Two Polaroids are crossed to each other. If one of them is rotated through 60° , then what percentage of the incident unpolarised light will be transmitted by the Polaroids? 1 point
- (a) 57.5%
 (b) 37.5%
 (c) 25%
 (d) 75%
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: b
- 9) The variation of light intensity is plotted as a function angle between the transmission directions of polarizer and analyzer. Which of the following four graphs will best represents this. 1 point



No, the answer is incorrect.
 Score: 0
 Accepted Answers:



- 10) The two polaroids, P_1 and P_3 in a given set up, are kept 'crossed' with respect to each other. A third polaroid, P_2 now put in between these two polaroids, can be rotated. The intensity of transmitted light will be maximum for angle between P_1 and P_2 (θ)=
1 point
- (a) 0°
 (b) 45°
 (c) 90°
 (d) 180°
- a
 b
 c
 d
- No, the answer is incorrect.
 Score: 0
 Accepted Answers: b