AAFAQ ACADEMY – KASUR

Paper: Physics **Chapter (9)** **Class: F.Sc. Part – I**

PHYSICAL OPTICS

Name: _____ Roll No: (in words) _____

EVENING GROUP

OBJECTIVE TYPE

Total Marks: 12 **Paper Code: _____** **Total Time: 10 Minutes**

NOTE: Write your **Roll No.** in space provided. Using lead pencil will result in loss of marks.

Q.No.1: You have four choices for each objective type question as A,B,C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Sr. No.	QUESTION	A	B	C	D
1.	Light can be polarized by	Selective Absorption	Reflection	Scattering	All of these
2.	Newton's rings are formed due to	Diffraction of light	Interference of light	Polarization of light	Reflection of light
3.	The phase change of 180^o is equal to the path difference of	λ	$\lambda/2$	2λ	3λ
4.	The blue of the sky is due to	Diffraction of light	Interference of light	Polarization of light	Scattering of light
5.	A white light beam when passed through a prism is	Deviated	Diffracted	Dispersed	Polarized
6.	Soap film in sunlight appears coloured due to	Dispersion of light	Diffraction of light	Scattering of light	Interference of light
7.	Two light waves which are not coherent cannot	Interfere	Be diffracted	Be polarized in the same plane	None of these
8.	Light on passing through a Polaroid is	Plane polarized	Un polarized	Circularly polarized	Elliptically polarized
9.	Interference effects of light were detected by.	Thomas young	Newton	Bragg	None of these
10.	Sun emits	Infrared light	Visible light	Ultraviolet light	All of these
11.	Huygen's principle is used to explain the	Speed of light	Dispersion of light	Propagation of light	Reflection of light
12.	We get light inside a room in a day time due to	Interference	Polarization	Refraction	Diffraction

SUBJECTIVE TYPE

Total Marks: 18 **Time Allowed: 0 Hours 50 Minutes**

SECTION – I (SHORT QUESTIONS)

2. Attempt any FIVE questions. (5×2=10)Marks

i. Write down two methods to obtain plane polarized beam of light.

ii. How is the distance between interference fringes affected by the separation between the slits of Young's experiment? Can fringes disappear?

iii. Explain whether the Young's experiment is an experiment for studying interference or diffraction effects of light.

iv. In the white light spectrum obtained with a diffraction grating, the third order image of a wavelength coincides with the fourth order image of a second wavelength. Calculate the ratio of the two wavelengths.

v. How would you manage to get more orders of spectra using a diffraction grating?

vi. Can visible light produce interference fringes? Explain.

vii. Under what conditions two or more sources of light behave as coherent sources?

SECTION – II (ESSAY TYPE) Attempt given question

3. Do as directed...

i. What is Michelson's interferometer? How we find wavelength of light by using interferometer? (5)

ii. A light is incident normally on a grating, which has 2500 lines per centimeter. Compute the wavelength of a spectral line for which the deviation in second order is 15.0^o. (3)

AAFAQ ACADEMY – KASUR

Paper: Physics **Chapter (9)** **Class: F.Sc. Part – I**

PHYSICAL OPTICS

Name: _____ Roll No: (in words) _____

EVENING GROUP

SECTION – III (Practical)

4. (a) Write answer of TWO questions. (2×2=4)

i. a
ii. c
iii. v
iv. b

4. (b) Write procedure to determine the resistance of voltmeter by graph method. (3)

(OR)

Write procedure to find the unknown high resistance by using neon flash lamp. (3)

4. (c) Answer the following questions on the basis of graph drawn between potential difference (V) **and charge** (Q)**.** (4)

i. What you conclude from the graph?
ii. Find the capacitance of capacitor from the graph.

Good Luck
Ch. Khalid Mahmood Ashraf