Dept. of Physics

DEGLOOR COLLEGE, DEGLOOR

MCQ for Practice

B.Sc. S.Y.

Unit: Polarization

1.	Natural light is		
	a) Plane polarized	b) Circularly polarized	
	c) Elliptically polarized	d) Unpolarized	
2.	Restriction of light into a single plane only is		
	a) Polarization	b) Diffraction	
	c) Interference	d) Refraction	
3.	Transverse nature of light can be proved by		
	a) Interference	b) Diffraction	
	c) Polarization	d) None of these	
4.	Which of the following is/are types of polarization		
	a) plane polarized	b) Elliptical polarization	
	c) Circular polarization	d) All above are correct	
5.	Polarization can be produced by		
	a) Reflection	b) Refraction	
	c) Double refraction	d) All above are correct	
6.	E. L. Malus discovered polarization of light by		
	a) Reflection	b) Refraction	
	c) Double refraction	d) All above are correct	
7.	On bright sunny days glare caused by sunlight on roadway is effect of		
	a) Interference	b) Diffraction	
	c) Polarization	d) None of these	
8.	According to Malus the extent of p	polarization occurs depends on	
	a) Angle at which light incident on surface b) The material		
	c) Both a and b are correct	d) Neither a nor b are correct	
9.	Electric field vector E of unpolariz	red light wave can be resolved into	

	a) s- components only	b) <i>p</i> - components only	
	c) Both <i>s</i> and <i>p</i> components	d) Neither <i>s</i> nor <i>p</i> components	
10.	ight the two components are of		
	a) Equal in magnitude	b) Not equal in magnitude	
	c) Zero magnitude	d) None of these	
11.	At polarizing angle, reflected beam contains		
	a) Only <i>p</i> - components	b) only s- components	
	c) Both <i>s</i> and <i>p</i> components	d) Neither <i>s</i> nor <i>p</i> components	
12.	Polarizing angle is also called as	CITE	
	a) Malus angle	b) Snell's angle	
	c) Brewster's angle	d) Huygen's angle	
13.	Perpendicular components of E vector are called		
	a) s- components	b) <i>p</i> - components	
	c) Both <i>s</i> and <i>p</i> components	d) Neither <i>s</i> nor <i>p</i> components	
14.	Parallel components of E vector are called		
	a) s- components	b) <i>p</i> - components	
	c) Both <i>s</i> and <i>p</i> components	d) Neither <i>s</i> nor <i>p</i> components	
15.	According to Brewster, polarizing a	ngle depends upon	
	a) Material	b) Refractive Index of medium	
	c) Both <i>a</i> and <i>b</i>	c) Neither <i>a</i> nor <i>b</i>	
16.	 16. According to Brewster, tangent of Brewster angle is equal to a) Square of Refractive Index of medium b) Square root of Refractive Index of medium 		
	c) Cube of Refractive index of medium		
	d) Refractive index of medium		
17.	$\mu = tan \theta_B$ Is known as		
	a) Malus law	b) Brewster law	
	c) Huygen law	d) Nicol law	
18.	18. Light reflected from any angle other than Brewster angle is		
	a) Partially Polarized	b) Completely polarized	

	c) Totally polarized	d) Unpolarized	
19.	Intensity of polarized light through polarizer is directly proportional to a) Square of cosine of angle between plane of polarization and transmission axis b) Square root of cosine of angle between plane of polarization and transmission axis c) Cosine of angle between plane of polarization and transmission axis d) Cube of cosine of angle between plane of polarization and transmission axis		
20	e-ray and o-ray are		
	a) circularly polarized c) Linearly polarized	b) elliptically polarizedd) None of these	
21.	Which of the following is/are uniaxial crystals		
	a) Calcite	b) Tourmaline	
	c) Quartz	d) All of these	
22.	Which of the following is/are biaxial crystals		
	a) Topaz	b) Tourmaline	
	c) Quartz	d) All of these	
23.	In double refraction along optic axis the speed of		
	a) o-ray is greater than e-ray	b) o-ray is less than e-ray	
	c) o-rays and e- rays are same	d) None of these	
24.	Nicol prism is		
	a) Interference device	b) Polarizing device	
	c) Diffracting device	d) None of these	
25.	In Nicol prism, the ends of rhombohedron are ground until makes an angle of Instead of 71 ⁰ with longitudinal edge		
	a) 68 ⁰	b) 65 ⁰	
	c) 63 ⁰	d) None	
26.	In Nicol prism, two parts of crystal are cemented together with		
	a) Canada Balsam	b) Topaz	
	c) Quartz	d) mica	
27.	Refractive Index of Canada Balsam is		
	a) 1.66	b)1.486	
	c) 1.55	d) 1.33	

28.	Which of the following is /are retarders ?		
	a) Half wave plate	b) Full wave plate	
	c) Quarter wave plate	d) All of these	
29.	introduces $\lambda/4$ path difference between e rays and o-rays		
	a) Half wave plate	b) Full wave plate	
	c) Quarter wave plate	d) All of these	
30.	Quarter wave plate introduces phase difference between e-rays and o-rays		
	a) 90 ⁰	b) 180 ⁰	
	c)270 ⁰	d)360 ⁰	
31	31 Half wave plate introduces phase difference between e-rays and o-rays		
	a) 90 ⁰	b) 180 ⁰	
	c)270 ⁰	d)360 ⁰	
32.	The path difference between e rays and o rays produced by half wave plate is equal to		
	a) wavelength (λ)	b) Half wavelength ($\lambda/2$)	
	c) Quarter wavelength ($\lambda/4$)	d) Twice wavelength (2λ)	
33.	3. Quarter wave plates are used for producing		
	a) Elliptically polarized light	b) Circularly polarized light	
	c) Both Elliptically or circularly polarized light	d) None of these	
34.	Thickness of half wave plate is		
	a) $d = \frac{\lambda}{2(1-1)}$	b) $d = \frac{\lambda}{\lambda}$	
	$2(\mu_0 - \mu_\rho)$	0) $u = \frac{1}{8(\mu_0 - \mu_e)}$	
	c) $d = \frac{\lambda}{\lambda}$	d) $d = \frac{\lambda}{8(\mu_0 - \mu_e)}$	
25	c) $d = \frac{\lambda}{4(\mu_0 - \mu_e)}$	d) $d = \frac{\lambda}{(\mu_0 - \mu_e)}$	
35.	c) $d = \frac{\lambda}{4(\mu_0 - \mu_e)}$ Natural ability to rotate the plane of polarization al	b) $u = \frac{1}{8(\mu_0 - \mu_e)}$ d) $d = \frac{\lambda}{(\mu_0 - \mu_e)}$ bout direction of polarization is	
35.	c) $d = \frac{\lambda}{4(\mu_0 - \mu_e)}$ Natural ability to rotate the plane of polarization all a) Retardation	b) $u = \frac{1}{8(\mu_0 - \mu_e)}$ d) $d = \frac{\lambda}{(\mu_0 - \mu_e)}$ bout direction of polarization is b) Specific rotation	
35.	c) $d = \frac{\lambda}{4(\mu_0 - \mu_e)}$ Natural ability to rotate the plane of polarization al a) Retardation c) Optical activity	b) $u = \frac{1}{8(\mu_0 - \mu_e)}$ d) $d = \frac{\lambda}{(\mu_0 - \mu_e)}$ bout direction of polarization is b) Specific rotation d) Double Refraction	
35. 36.	c) $d = \frac{\lambda}{4(\mu_0 - \mu_e)}$ Natural ability to rotate the plane of polarization all a) Retardation c) Optical activity Which of the following is /are applications of optic	b) $u = \frac{1}{8(\mu_0 - \mu_e)}$ d) $d = \frac{\lambda}{(\mu_0 - \mu_e)}$ bout direction of polarization is b) Specific rotation d) Double Refraction cal activity?	
35. 36.	c) $d = \frac{\lambda}{4(\mu_0 - \mu_e)}$ Natural ability to rotate the plane of polarization al a) Retardation c) Optical activity Which of the following is /are applications of optic a) Light beam modulators	b) $u = \frac{1}{8(\mu_0 - \mu_e)}$ d) $d = \frac{\lambda}{(\mu_0 - \mu_e)}$ bout direction of polarization is b) Specific rotation d) Double Refraction cal activity? b) Q- switches	

37.	Which of the following is /are optically active substances?		
	a) Quartz	b) Mica	
	c) Topaz	d) All of these	
38.	8. Which of the following is /are optically active substances?		
	a) cinnabar	b) Sugar solution	
	c) Tartaric acid	d) All of these	
39.	In solution the amount of rotation θ is given by θ	= s c l where s is	
	a) Concentration of solution	b) length in decimeters	
	c) Rotational constant	d) Specific rotation	
40.	Polarimeter is an instrument used for determination of		
	a) Interference of light	b) Diffraction of light	
	c) Resolving power	d) Optical rotation	