ECAT Pre General Science Physics Chapter 9 Physical Optics Online Test

Sr	Questions	Answers Choice
1	A prism splits a beam of white light into seven component colors. This is so because	A. Phase of different colors is different B. Amplitude of different colors is different C. Wavelength of different colors is different D. Velocity of different colors is different
2	Stars twinkle due to	A. The fact that they do not emit light continuously B. The refractive index of earth's atmosphere fluctuates C. The Star's atmosphere absorbs its light intermittently D. None of these
3	Light appears to travel in straight line because	A. It is not absorbed by the atmosphere B. It is refracted by the atmosphere C. Its wavelength is very small D. Its velocity is very large
4	Which one of the following phenomenon cannot be explained on the bases of Huygen's theory	A. Refraction B. Reflection C. Diffraction D. Formation of spectrum
5	If yellow light emitted by sodium lamp in Young's double slit experiment is replaced by blue light of the same intensity	A. Fringe width will decrease B. Fringe width will increase C. Fringe width will remain unchanged D. Fringe will become less intense
6	The contrast in the fringes in an interference pattern depends upon	A. Fringe width B. Relative difference intensities of the two sources C. Distance between the slits D. Wavelength
7	Huygen's theory cannot explain	A. Diffraction B. Interference C. Polarization D. Photoelectric effect
8	Which one the following gives three regions of electromagnetic spectrum in order of increasing wavelength?	A. Gamma rays, micro waves, visible light B. Radio waves, ultraviolet waves, X-rays C. Ultraviolet rays, infrared rays, micro waves D. Visible light, gamma rays, radio waves
9	The image of the tip of a needle is never sharp because of	A. Polarization of light B. Interference of light C. Diffraction of light D. Reflection of light
10	The velocity of light in vacuum can be changed by changing	A. Frequency B. Amplitude C. Wavelength D. None of these
11	The cause of mirage observed in deserts in bright sunlight is due to	A. Refraction of light B. Reflection of light C. Scattering of light D. Total internal reflection of light
12	According to Huygen's principle	A. light travels in straight line B. Light is a transvers wave C. Light has dual nature D. All points on the primary wave-front are the sources of secondary wavelets

13	The locus of all points in a medium having same phase of vibration is called	A. Crest B. Trough C. Wavelength D. Wave-front
14	The superposition of the two waves of same frequency and amplitude travelling in the same direction gives to an effect called	A. Diffraction B. Interference C. Polarization D. Dispersion
15	In order to get interference using two light rays	A. The sources should be monochromatic and coherent B. The sources should have the same frequency C. Superposition should be linear D. All of these
16	Light has:	A. Wave nature B. Particle nature C. Dual nature D. None of these
17	Light waves are:	A. Transverse wave B. Longitudinal wave C. Compressional wave D. None of them
18	Wave length of light, on the average, is given by:	A. 10⁻¹⁴_m B. 10⁻¹⁰_m C. 10⁻⁶_m D. 10⁻⁴_m
19	Electromagnetic waves transport:	A. Energy only B. Momentum only C. Both A and B are correct D. None of is correct
20	Which one of the following can act approximately as a source of monochromatic light;	A. Neon lamp B. Fluorescent tube C. Sodium lamp D. None of these
21	Wave length of that color as compared to that of violet color is:	A. Smaller B. Longer C. Equal D. None of these
22	Frequency of red color as compared to that of violet color is:	A. Equal B. Smaller C. Greater D. None of these
23	Monochromatic light means waves of:	A. Same frequency B. Same colour C. Same wavelength D. All of them
24	The locus of all the points in the same phase of vibration is called:	A. Wave packet B. Wave front C. Wave number D. None of them
25	Angle between the ray of light and the corresponding wavefront is:	A. 0<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">° B. 60<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">° C. 90<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip:

		initial;">° D. 120<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial; background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">°
26	Huygen principle is used to determine:	A. Speed of light B. Location of wavefront C. About polarized or unpolarized light D. None of them
27	In case of point, source of light shape of wavefront is:	A. Spherical B. Cylindrical C. Plane D. None of these
28	Speed of light in vacuum depends upon:	A. Frequency B. Wavelength C. Amplitude D. None of these
29	When a source of light isat very large distance,the shape of wavefront is:	A. Spherical B. Cylindrical C. Plane D. None of these
30	The speed of the secondary wavelets as mentioned in Huygen's principle is _____ the speed of propagation of the wave itself.	A. Equal to B. Greater than C. Smaller than D. None of these
31	Laws of reflection and refraction can also be explained by:	A. Particle nature of light B. Quantum nature of light C. Wave nature of light D. Complex nature of light
32	The wave nature of light was proposed by:	A. Newton B. Thomas Young C. Huygen D. None of these
33	Huygen's principles states that:	A. Light has dual nature B. Either of these C. None of these D. Light travels in straigth line
34	A line which represents the direction of travel of a wave is known as:	A. Spherical Wavefront B. Locus C. Ray D. Either B or C
35	The property of light which does not change with the nature of the medium is:	A. Frequency B. Amplitude C. Wavelength D. None of these
36	The appearance of the colour in the soap (oil) film results from:	A. Dispersion B. Interference C. Reflection D. Refraction
37	To sources are said to be coherent if they have:	A. Same amplitude B. Same wavelength C. Definite phase relation with each other D. None of them
38	To observe interference of light, the condition, which must be met with is that the sources must be:	A. Monochromatic B. Phase coherent C. Both of above D. None of above
39	In case of destructive interference of two waves, the amplitude of the resultant wave will be ____ either of the waves:	A. Greater than B. Smaller than C. Equal to D. None of these
40	The terms phase difference and path difference are:	A. Same B. Different C. Equal D. None of these
		A. Greater than

41	In case of constructive interference of two waves, the amplitude of the resultant wave is _____ either of the waves:	B. Equal to C. Smaller than D. None of these
42	In an interference pattern of Young's double slit(YDS) experiment:	A. Bright fringesare wider than dark fringes B. Dark fringes are wider than bright fringes C. Both dark and bright fringes are of equal width D. Central fringes are wider than the outer fringes
43	In YDS experiment, fringe spacing means the distance between two consecutive ____fringes.	A. Bright B. Dark C. Any of A and B D. None of these
44	The least distance of distinct vision is:	A. 10 cm B. 25 cm C. 50 cm D. 100 cm
45	With age, least distance of distinct vision:	A. Increases B. Decreases C. Is not affected D. None is correct
46	The distance from eye to near point is taken as:	A. 10 cm B. 15 cm C. 20 cm D. 25 cm
47	A convex lens acts as diverging lens when the object is placed:	A. Between F and 2F B. At 2F C. With focal length D. Beyond 2F
48	A convex lens acts as diverging lens when the object is placed:	A. Beyond 2F B. At 2F C. With focal length D. Between F and 2F
49	When the object lies between F and 2F, the image formed by is formed at:	A. Real B. Virtual C. Diminished D. Erect
50	When the object lies between F and 2F, the image formed by is formed at:	A. Virtual B. Diminished C. Erect D. Real
51	If the object is situated at focus of a convex lens, then its image is formed at:	A. F B. 2F C. Infinity D. None of these
52	How is the image formed by a convex lens affected if the upper half of the lens is covered with a paper:	A. The upper half of the image is cut off B. The brightness of the image is reduced C. The brightness of the image is increased D. No effect at all
53	If the focal length of the convex lens is 5 cm, then to get the real and inverted image of the same size as that of object, the object should be placed at:	A. 5 cm B. 10 cm C. 20 cm D. 15 cm
54	If the focal length of the convex lens is 5 cm, then to get the real and inverted image of the same size as that of object, the object should be placed at:	A. 15 cm B. 20 cm C. 10 cm D. 5 cm
55	The ratio of the diameter of two convex lenses is _____-the ratio of their focal lengths:	A. Greater than B. Less than C. Equal to D. None of these
56	Least distance of distinct vision of an old man possibly becomes:	A. A little less than 25 cm B. A little more than 25 cm C. Much less than 25 cm D. None of these
		A. Focus

57	Conventionally, all the distance p, q, f are measured from _____ of the lens:	B. Optical center C. Edges D. None of these
58	If the object and its image are located at a distance of 5 cm from the focus of a convex lens, the focus length of the lens will be:	A. 5 cm B. 10 cm C. 20 cm D. 25 cm
59	A ray passing through optical center of a lens, after refraction:	A. Passes through focus B. Go deviated C. Retraces its path D. Both B and C
60	For the virtual image, option _____ is not correct:	A. 1/p = 1/f -1/q B. 1/f = 1/p -1/q C. 1/p=1/p-1/f D. 1/p=1/f+1/q
61	A virtual image is formed when object is placed:	A. Within focal length of a convex lens B. Near the focal point of a concave lens C. Both A and B D. Away from 2F of a convex lens
62	When the same object is viewed at a shorter distance, the image on the retina of the eye is _____ the so the object appears:	A. Greater, smaller B. Smaller, smaller C. Smaller, larger D. Greater, larger
63	If the object is placed at 12 cm distance from a convex lens of focal length 6 cm, then we get an image of ____ as that of object:	A. Double the size B. Same size C. Half the size D. None of these
64	The ratio of the size of the image to that of object is called:	A. Focal length B. Aperture C. Linear magnification D. Principal axis
65	The size of the image is maximum when its distance from the magnifying glass is:	A. 0.10 m B. 0.15 m C. 0.20 m D. 0.25 m
66	The magnifier forms a virtual image of the object at:	A. None of these B. Least distance of distinct vision C. Much farther than the least distance D. Both A and B are correct
67	The magnifier forms a virtual image of the object at:	A. None of these B. Both A and B are correct C. Much farther than the least distance D. Least distance of distinct vision
68	A magnifier gives an image which is:	A. Virtual, inverted B. Real, erect C. Virtual, erect D. Real, inverted
69	The image of an object 5 mm length is only 1 cm high. The magnification produced by lens is:	A. 1 B. 0.2 C. 2 D. 0.1
70	The focal length of convex lens having magnifying power of 5.55 is:	A. 5.5 cm B. 5 cm C. 4.5 cm D. 6 cm
71	To see the minor details of the object by microscope, it should have:	A. High magnifying power B. High resolving power C. Am objective of larger focal length D. None of these
72	Resolving power in mth order diffraction for grating is given by:	A. R = N/m B. R = m/N C. None of these D. R = N x m
73	Resolving power in mth order diffraction for grating is given by:	A. R = m/N B. R = N x m C. None of these D. R = N/m
		A. Smaller

74	A grating with high resolving power can distinguish _____ difference in wavelengths :	A. Smaller B. Larger C. Zero D. None of these
75	A grating with high resolving power can distinguish _____ difference in wavelengths :	A. Larger B. Zero C. None of these D. Smaller
76	In the formula R = N x m for diffraction grating, N denotes:	A. No. of lines/cm B. No. of lines/meter C. Total number of lines D. None of above
77	Certain light of wavelength 600 nm is used to view an object under the microscope. If the aperture of its objective is 1.22 cm, then the limiting angle of resolution will be:	A. 6 x 10⁻⁵rad B. 7 x 10⁻⁵rad C. 8 x 10⁻⁵rad D. None of these