Physics ECAT Pre Engineering Chapter 9 Physical Optics Online Test

Sr	Questions	Answers Choice
1	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
2	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
3	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
4	When the object lies between F and 2F, the image formed by is formed at:	A. Real B. Virtual C. Diminished D. Erect
5	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;">°
6	The distance from eye to near point is taken as:	A. 10 cm B. 15 cm C. 20 cm D. 25 cm
7	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
8	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
9	Frequency of red color as compared to that of violet color is:	A. Equal B. Smaller C. Greater

		D. None of these
10	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
11	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
12	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
13	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
14	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
15	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
16	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
17	In case of point, source of light shape of wavefront is:	A. Spherical B. Cylindrical C. Plane D. None of these
18	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
19	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
20	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
21	Light has:	A. Wave nature B. Particle nature C. Dual nature D. None of these
22	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
23	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
24	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
25	When the object lies between F and 2F, the image formed by is formed at:	A. Virtual B. Diminished C. Erect D. Real

		D. Real
26	Conventionally, all the distance p, q, f are measured from _____ of the lens:	A. Focus B. Optical center C. Edges D. None of these
27	Resolving power in mth order diffraction for grating is given by:	A. R = N x m B. None of these C. R = m/N D. R = N/m
28	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
29	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
30	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
31	A magnifier gives an image which is:	A. Virtual, inverted B. Real, erect C. Virtual, erect D. Real, inverted
32	The locus of all points in a medium having same phase of vibration is called	A. Crest B. Trough C. Wavelength D. Wave-front
33	Huygen principle is used to determine:	A. Speed of light B. Location of wavefront C. About polarized or unpolarized light D. None of them
34	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
35	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
36	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
37	The terms phase difference and path difference are:	A. Same B. Different C. Equal D. None of these
38	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
39	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
40	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
41	Monochromatic light means waves of:	A. Same frequency B. Same colour C. Same wavelength D. All of them

		D. All of them
42	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
43	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
44	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
45	The least distance of distinct vision is:	A. 10 cm B. 25 cm C. 50 cm D. 100 cm
46	Huygen's theory cannot explain	A. Diffraction B. Interference C. Polarization D. Photoelectric effect
47	The appearance of the colour in the soap (oil) film results from:	A. Dispersion B. Interference C. Reflection D. Refraction
48	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
49	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
50	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. 10 cm C. 20 cm D. 5 cm
51	A grating with high resolving power can distinguish _____ difference in wavelengths :	A. Larger B. Zero C. None of these D. Smaller
52	Speed of light in vacuum depends upon:	A. Frequency B. Wavelength C. Amplitude D. None of these
53	With age, least distance of distinct vision:	A. Increases B. Decreases C. Is not affected D. None is correct
54	When a source of light isat very large distance,the shape of wavefront is:	A. Spherical B. Cylindrical C. Plane D. None of these
55	The velocity of light in vacuum can be changed by changing	A. Frequency B. Amplitude C. Wavelength D. None of these
56	Wave length of that color as compared to that of violet color is:	A. Smaller B. Longer C. Equal D. None of these
57	A grating with high resolving power can distinguish _____ difference in wavelengths :	A. Smaller B. Larger C. Zero D. None of these
58	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

58	The magnifier forms a virtual image of the object at:	C. Much farther than the least distance D. Least distance of distinct vision
59	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
60	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
61	Huygen's principles states that:	A. Light has dual nature B. Either of these C. None of these D. Light travels in straigth line
62	Resolving power in mth order diffraction for grating is given by:	A. R = N/m B. R = m/N C. R = N x m D. None of these
63	Electromagnetic waves transport:	A. Energy only B. Momentum only C. Both A and B are correct D. None of is correct
64	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
65	The wave nature of light was proposed by:	A. Newton B. Thomas Young C. Huygen D. None of these
66	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
67	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
68	Light waves are:	A. Transverse wave B. Longitudinal wave C. Compressional wave D. None of them
69	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
70	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
71	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
72	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
73	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
74	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. 20 cm C. 10 cm D. 15 cm
75		A. The fact that they do not emit light

75	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
76	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
77	In case of constructive interference of two waves, the amplitude of the resultant wave is _____ either of the waves:	A. Greater than B. Equal to C. Smaller than D. None of these