

ECAT Pre General Science Online Test

Sr	Questions	Answers Choice
1	The rate at which the free electrons pass through any section of a metallic wire from right to left is:	<p>A. <p class="MsoNormal" style="text-align: justify;">Greater than the speed at which they pass from left to right</p></p> <p>B. <p class="MsoNormal" style="text-align: justify;">Less than the speed at which they pass from left to right</p></p> <p>C. <p class="MsoNormal" style="text-align: justify;">The same speed at which they pass from left to right</p></p> <p>D. <p class="MsoNormal" style="text-align: justify;">Any of above</p></p> <p>E. <p class="MsoNormal" style="text-align: justify;">None of them</p></p>
2	The rate at which the free electrons pass through any section of a metallic wire from right to left is:	<p>A. <p class="MsoNormal" style="text-align: justify;">Greater than the speed at which they pass from left to right</p></p> <p>B. <p class="MsoNormal" style="text-align: justify;">Less than the speed at which they pass from left to right</p></p> <p>C. <p class="MsoNormal" style="text-align: justify;">The same speed at which they pass from left to right</p></p> <p>D. <p class="MsoNormal" style="text-align: justify;">Any of above</p></p> <p>E. <p class="MsoNormal" style="text-align: justify;">None of them</p></p>
3	The free electrons in metals:	<p>A. <p class="MsoNormal" style="text-align: justify;">Are in random motion and their speed depends upon temperature</p></p> <p>B. <p class="MsoNormal" style="text-align: justify;">Move in particular direction</p></p> <p>C. <p class="MsoNormal" style="text-align: justify;">Move with speed of light</p></p> <p>D. <p class="MsoNormal" style="text-align: justify;">Move such that their speed depends upon their temperature</p></p>

		speed does not depend on their temperature E. None of these
4	In a metal, the valence electrons are:	A. Attach to individual atoms B. Not attached to individual atoms C. Free to move within the metal D. Both (A) and (C) E. Both (B) and (C)
5	The positive charge moving in one direction is equivalent in all external affects to a:	A. Negative charge is moving in the same direction B. Positive charge is moving in the opposite direction C. Negative charge moving in the opposite direction D. Positive charges moving in the same direction E. None of these
6	The current of 1 ampere is passing through a conductor. The charge passing through it in half a minute is:	A. One coulomb B. 0.5 coulomb C. 30 coulomb D. 2 coulombs E. None of these

7 The conventional current is the name given to current due to flow of:

Roman" serif, font-size: 12pt; text-align: justify;">Positrons
B. <p class="MsoNormal" style="text-align: justify">
Positive charges<o:p></o:p>
</p>
C. <p class="MsoNormal" style="text-align: justify">
Negative charges<o:p></o:p></p>
D. <p class="MsoNormal" style="text-align: justify">
Both (A) and (C)<o:p></o:p></p>
E. <p class="MsoNormal" style="text-align: justify">
None of these<o:p></o:p></p>

8 In gases, the charge carries are:

A. <p class="MsoNormal" style="text-align: justify">
Electrons<o:p></o:p></p>
B. <p class="MsoNormal" style="text-align: justify">
Positive ions<o:p></o:p></p>
C. <p class="MsoNormal" style="text-align: justify">
Negative ions<o:p></o:p></p>
D. <p class="MsoNormal" style="text-align: justify">
Both (A) and (C)<o:p></o:p></p>
E. <p class="MsoNormal" style="text-align: justify">
Both (A) and (B)<o:p></o:p></p>

9 The charge carries in the electrolyte are:

A. <p class="MsoNormal" style="text-align: justify">
Positive ions<o:p></o:p></p>
B. <p class="MsoNormal" style="text-align: justify">
Negative ions<o:p></o:p></p>
C. <p class="MsoNormal" style="text-align: justify">
Either (A) or (B)<o:p></o:p></p>
D. <p class="MsoNormal" style="text-align: justify">
Both (A) and (B)<o:p></o:p></p>
E. <p class="MsoNormal" style="text-align: justify">
Neither (A) nor (B)<o:p></o:p></p>

10 In case of metallic conductors, the change carries are:

A. <p class="MsoNormal" style="text-align: justify">
Protons<o:p></o:p></p>
B. <p class="MsoNormal" style="text-align: justify">
Electrons<o:p></o:p></p>
C. <p class="MsoNormal" style="text-align: justify">
Antiprotons<o:p></o:p></p>
D. <p class="MsoNormal" style="text-align: justify">

		Positrons</p> E. <p class="MsoNormal" style="text-align: justify">Both (A) and (B)</p>
11	The current that flows through the coil of a motor causes:	A. <p class="MsoNormal" style="text-align: justify">Its shaft to revolve</p> B. <p class="MsoNormal" style="text-align: justify">Its brushes to rotate</p> C. <p class="MsoNormal" style="text-align: justify">Motor to move</p> D. <p class="MsoNormal" style="text-align: justify">Its shafts to rotate</p> E. <p class="MsoNormal" style="text-align: justify">None of these</p>
12	Most practical application of electricity involve	A. <p class="MsoNormal" style="text-align: justify">Charges at the rest</p> B. <p class="MsoNormal" style="text-align: justify">Charges in the motion</p> C. <p class="MsoNormal" style="text-align: justify">Electrons at rest</p> D. <p class="MsoNormal" style="text-align: justify">Atoms in motion</p> E. <p class="MsoNormal" style="text-align: justify">Molecules in motion</p>
13	An eV is unit of:	A. <p class="MsoNormal">Potential</p> B. <p class="MsoNormal">Energy</p> C. <p class="MsoNormal">Work</p> D. <p class="MsoNormal">Power</p> E. <p class="MsoNormal">Both (B) and (C)</p>
		A. <p class="MsoNormal">Equal</p>

14 The earth's potential and potential at infinity are taken:

</p>

B. <p class="MsoNormal">Zero</p>

C. <p class="MsoNormal">First is greater than the second</p>

D. <p class="MsoNormal">Second is greater than the first</p>

E. <p class="MsoNormal">Both (A) and (B)</p>

15 Another mean of electric potential energy per unit charge is given by:

A. <p class="MsoNormal">Electric intensity</p>

B. <p class="MsoNormal">Potential gradient</p>

C. <p class="MsoNormal">Electric Flux</p>

D. <p class="MsoNormal">Potential difference</p>

E. <p class="MsoNormal">None of these</p>

16 Tick the correct statement:

A. <p class="MsoNormal">Both the potential and potential difference is scalars</p>

B. <p class="MsoNormal">Potential is a scalar but potential difference is a vector</p>

C. Both are vectors<p class="MsoNormal"></p>

D. <p class="MsoNormal">Potential is vector but potential difference is scalar</p>

E. <p class="MsoNormal">None of these</p>

</p>

17 The surface destiny of charge is defined is:

A. <p class="MsoNormal">Charge per volume<o:p></o:p></p>
B. <p class="MsoNormal">Mass per volume<o:p></o:p></p>
C. <p class="MsoNormal">Charge per area<o:p></o:p></p>
D. <p class="MsoNormal">Mass per area<o:p></o:p></p>
E. <p class="MsoNormal">Both (B) and (C)<o:p></o:p></p>

18 Gaussian surface is always:

A. <p class="MsoNormal">Rectangular<o:p></o:p></p>
B. <p class="MsoNormal">Spherical<o:p></o:p></p>
C. <p class="MsoNormal">Cylindrical<o:p></o:p></p>
D. <p class="MsoNormal">Box shape<o:p></o:p></p>
E. <p class="MsoNormal">Any of these<o:p></o:p></p>

19 A field free region is found:

A. <p class="MsoNormal">Near the outer surface of a hollow charged metal sphere<o:p></o:p></p>
B. <p class="MsoNormal">In the interior of solid metal uncharged sphere<o:p></o:p></p>
C. <p class="MsoNormal">In the interior of solid metal charged sphere<o:p></o:p></p>
D. <p class="MsoNormal">Both (A) and (B)<o:p></o:p></p>
E. <p class="MsoNormal">None of these<o:p></o:p></p>

		size: 12.0pt; line-height: 107%; font-family: "Times New Roman"; "serif"; mso-fareast-font-family: "Times New Roman"; mso-fareast-theme-font: minor-fareast">Both (A) and (C)</p></p>
20	While finding the electric intensity at a point between two oppositely charged parallel plates, the Gaussian surface is taken in the form of a hollow:	A. <p class="MsoNormal">Circle</p> B. <p class="MsoNormal">Rectangle</p> C. <p class="MsoNormal">Sphere</p> D. <p class="MsoNormal">Box</p> E. <p class="MsoNormal">Cylinder</p>
21	The interior of a hollow charged metal sphere is a region which:	A. <p class="MsoNormal">Contain some magnitude of electric field</p> B. <p class="MsoNormal">Is full of electric field lines</p> C. <p class="MsoNormal">Is field-free region</p> D. <p class="MsoNormal">Either (A) or (B)</p> E. <p class="MsoNormal">None of these</p>
22	The flux through a closed surface depends upon:	A. <p class="MsoNormal">Shape of geometry of the closed surface</p> B. <p class="MsoNormal">Charge enclosed</p> C. <p class="MsoNormal">Nature of the medium</p> D. <p class="MsoNormal">

		Both (A) and (B) E. Both (B) and (C)
23	Flux through a closed surface of any shape and flux through the surface of a sphere drawn around a charge are:	A. Different B. Same C. Such that it is greater in the first case D. Such that it is greater in the second case E. None of these
24	Certain charge +q is placed at the center of a sphere. At each of the sphere, The directions of electric intensity and vector area are:	A. Same B. Different C. Opposite to each other D. At 60° with each other E. Both (B) and (C)
25	The electric flux through any surface depends upon:	A. Intensity of electric field B. Area of the surface C. Angle between intensity and area D. All of these E. None of these
26	When certain area A is held parallel to the field lines, then:	A. No lines cross this area B. Maximum lines pass through this area C. The number of lines are between zero and maximum D.

		New Roman", "serif",>Both (A) and (B) correct</p></p> E. <p class="MsoNormal">None of these</p></p>
27	The number of field lines passing through unit area held perpendicular to the field lines represent:	A. <p class="MsoNormal">Flux in that region</p></p> B. <p class="MsoNormal">Intensity of the field</p></p> C. <p class="MsoNormal">Charge</p></p> D. <p class="MsoNormal">Area of the region</p></p> E. <p class="MsoNormal">None of these</p></p>
28	Electric flux is:	A. Cross product of two vector<p class="MsoNormal"> B. <p class="MsoNormal">Dot product of two vectors</p></p> C. <p class="MsoNormal">A vector quantity</p></p> D. <p class="MsoNormal">A scalar quantity</p></p> E. <p class="MsoNormal">Both (B) and (D)</p></p>
29	An inkjet printer uses in its operation:	A. <p class="MsoNormal">Neutrons only</p></p> B. <p class="MsoNormal">Mesons only</p></p> C. <p class="MsoNormal">Positrons and photons</p></p> D. <p class="MsoNormal">An electric charge</p></p> E. <p class="MsoNormal">None of these</p></p>
30	An important part of inkjet printer is:	A. mso-fareast-font-family: Calibri; mso-fareast-theme-font: minor-latin; mso-ansi-language: EN-US; mso-fareast-language: EN-US; mso-bidi-language: AR-SA">Toner B. <p class="MsoNormal">Drum</p></p> C. <p class="MsoNormal">Deflection plates</p></p> D. <p class="MsoNormal">Heated roles</p></p>

		E. None of these
31	The inkjet printer ejects a thin stream of:	A. Water B. Oil C. Ink D. Any of above E. None of these
32	Aluminum is a:	A. Good insulator B. Bad conductor C. Both (A) and (B) D. Excellent conductor E. Semiconductor
33	Selenium is:	A. An insulator B. A conductor C. Insulator in the dark and becomes conductor when exposed to light D. Conductor in the dark only E. None of these
34	An important part of photocopier is:	A. Toner cartridge B. Deflection plates C. Charging electrode D. Print head E. None of these

		size:12.0pt;line-height:107%;font-family: "Times New Roman";"serif",>None of these<o:p></o:p></p>
35	An example of photoconductor is:	A. <p class="MsoNormal">Boron<o:p></o:p></p> B. <p class="MsoNormal">Carbon<o:p></o:p></p> C. <p class="MsoNormal">Iron<o:p></o:p></p> D. <p class="MsoNormal">Aluminum<o:p></o:p></p> E. <p class="MsoNormal">Selenium<o:p></o:p></p>
36	Xerography means:	A. <p class="MsoNormal">Dry writing<o:p></o:p></p> B. Wet writing<p class="MsoNormal"><o:p></o:p></p> C. <p class="MsoNormal">Poor writing<o:p></o:p></p> D. <p class="MsoNormal">Excellent writing<o:p></o:p></p> E. <p class="MsoNormal">Both (A) and (B)<o:p></o:p></p>
37	Static electricity is produced by the transfer of	A. <p class="MsoNormal">Electrons<o:p></o:p></p> B. <p class="MsoNormal">Protons<o:p></o:p></p> C. <p class="MsoNormal">One fluid<o:p></o:p></p> D. <p class="MsoNormal">Two fluids<o:p></o:p></p> E. <p class="MsoNormal">None of these<o:p></o:p></p>
38	Electrostatics is the branch of physics which deals with the study of electro charges:	A. <p class="MsoNormal">At rest<o:p></o:p></p> B. <p class="MsoNormal">At rest under the action of electric forces<o:p></o:p></p> C. <p class="MsoNormal">In motion under the action of electric forces<o:p></o:p></p> D. <p class="MsoNormal">In motion<o:p></o:p></p> E. <p class="MsoNormal">At rest under the action of nuclear forces<o:p></o:p></p>

39	In case of two identical charges placed certain distance apart, the electric field lines are:	<p>A. <p class="MsoNormal">Straight</p></p> <p>B. <p class="MsoNormal">Sine curves</p></p> <p>C. <p class="MsoNormal">Curved</p></p> <p>D. <p class="MsoNormal">Both (A) and (B)</p></p> <p>E. <p class="MsoNormal">None of these</p></p>
40	Field lines are closer to each other in the region where the field is:	<p>A. <p class="MsoNormal">Stronger</p></p> <p>B. <p class="MsoNormal">Weaker</p></p> <p>C. <p class="MsoNormal">Much weaker</p></p> <p>D. <p class="MsoNormal">Absent</p></p> <p>E. <p class="MsoNormal">None of these</p></p>
41	Electric field lines emerge from the charge in:	<p>A. <p class="MsoNormal">One dimension</p></p> <p>B. <p class="MsoNormal">Two dimensions</p></p> <p>C. <p class="MsoNormal">Three dimensions</p></p> <p>D. <p class="MsoNormal">Four dimensions</p></p> <p>E. <p class="MsoNormal">None of them</p></p>
42	The value of relative permittivity of different dielectrics are:	<p>A. <p class="MsoNormal">Equal</p></p> <p>B. <p class="MsoNormal">Different</p></p> <p>C. <p class="MsoNormal">Greater than one</p></p> <p>D. <p class="MsoNormal">Smaller than one</p></p> <p>E. <p class="MsoNormal">Both (B) and (C)</p></p>
43	The value of Egin coulomb's law is:	A. $9 \times 10^9 \text{ Nm}^2 \text{ C}^{-2}$ B. $8.85 \times 10^{-12} \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$ C. $8.85 \times 10^{12} \text{ Nm}^2 \text{ C}^{-2}$ D. $9 \times 10^9 \text{ C}^2 \text{ N}^{-1} \text{ m}^{-2}$

44	If the distance between two charges is doubled, the force between them will become:	A. Double B. Half C. Three times D. One fourth E. One third
45	Average KE of a gas molecule has:	A. Direct relation with absolute temperature and inverse relation with pressure B. Direction relation with both absolute temperature and pressure C. Inverse relation with both absolute temperature and pressure D. None of these
46	Gas constant per molecule is called:	A. Universal gas constant B. Stefan's constant C. Boltzmann constant D. Gravitation constant
47	Tick the correct pair when M denotes the molecular mass and other symbols carry usual meanings:	A. $N = nN_A$, $m = MN_A$ B. $n = N/N_A$, $M = mN_A$ C. $M = N/N_A$, $N = m/n$ D. $N = nN_A$, $M = mN_A$
48	In the formula $P = N_0KT$, N_0 denotes:	A. Number of molecules per unit per volume B. Number of moles C. Number of molecules D. None of these
49	The value of universal gas constant R is:	A. 8.314 J/K mole K B. 8314 J/K mole K C. 8.314 J/mole K D. None of these
50	If the formula $PV = nRT$, n denotes:	A. Number of molecules per unit volume B. Number of moles C. Number of molecules D. None of these
51	While deriving equation of pressure by kinetic theory of gases, we take into account:	A. Only linear motion of molecules B. Only rotational motion C. Only vibratory motion D. All of these
52	Pressure applied at any point of gas at rest is transmitted equally to all parts of the gas. This is the statement of:	A. Newton's second law B. Pascal's law C. Carnot theorem D. Second law of thermodynamics
53	If N denotes the total number of molecules in cubic vessel such that m is mass of each molecule and l is length of each side of vessel, then mN/l^3 gives the:	A. Force B. Density C. Work done D. Pressure
54	The rate of change of momentum of a molecule is equal to:	A. Pressure B. Work C. Density D. Force
55	If a molecule with momentum mv strikes a wall and rebound then the change in momentum will be:	A. $-2mv$ B. Zero C. $2mv$ D. mv
56	Pressure may be define as _____ per second per unit area:	A. Change in force B. Change in momentum C. Change in energy D. Work done
57	Truth of kinetic energy is confirmed by:	A. Diffusion of gases B. Brownian motion C. Both A and B D. None of these
58	Electromagnetic waves emitted by hot bodies are called:	A. Photoelectrons B. Alpha rays C. Thermal radiation D. None of these
59	The nature of thermal radiation is similar to:	A. Ultraviolet rays B. Light rays C. Both of them D. None of these
60	The relationship between Boltzmann constant k with R and N_A is given as:	A. $k = R/N_A$ B. $k = R/N_A$ C. $k = NR/N_A$ D. None of these

61	At constant temperature, if the density of the gas is increased, its pressure will:	A. One kg of a substance B. Unit volume of a substance C. One mole of a substance D. None of these
62	The motion of molecules in gases is:	A. Orderly B. Random C. Circular D. All of these
63	In an ideal gas, the molecules have:	A. Kinetic energy only B. Potential energy only C. Both KE and PE D. None of these
64	Which of the following does not have the same units:	A. Work B. Heat C. Kinetic energy D. Power
65	The temperature scale approved in SI units is:	A. Celsius scale B. Kelvin scale C. Fahrenheit scale D. None of these
66	In the theory of dimensional analysis, heat may be properly represented by:	A. ML^2T^{-2} B. MT^{-2} C. $ML^{-1}T^{-1}$ D. None of these
67	The only significant motion possessed by the mono-atomic gas represented is:	A. Translatory B. Rotatory C. Vibratory D. None of these
68	At the constant temperature, if the value of a given mass of a gas is double, then the density of gas becomes:	A. Double B. Remains constant C. Half D. None of these
69	Real gases strictly obey gas law at:	A. High pressure and low temperatures B. Low pressures and high temperatures C. High pressures and high temperatures D. None of these
70	A gas which strictly obeys the gas laws under all conditions of temperature and pressure is called:	A. Ideal gas B. Inert gas C. Real gas D. None of these
71	When two objects come to common temperature, the body is said to be in:	A. Static equilibrium B. Dynamic equilibrium C. Thermal equilibrium D. None of these
72	Absolute zero is considered as that temperature at which:	A. All liquid become gases B. All gases become liquid C. Water freezes D. None of these
73	Hotness and coldness of an object is represented in terms:	A. Heat B. Temperature C. Chemical energy D. None of these
74	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. 6×10^{-5} rad B. 7×10^{-5} rad C. 8×10^{-5} rad D. None of these
75	In the formula $R = N \times m$ for diffraction grating, N denotes:	A. No. of lines/cm B. No. of lines/meter C. Total number of lines D. None of above
76	A grating with high resolving power can distinguish _____ difference in wavelengths :	A. Larger B. Zero C. None of these D. Smaller
77	A grating with high resolving power can distinguish _____ difference in wavelengths :	A. Smaller B. Larger C. Zero D. None of these
78	Resolving power in mth order diffraction for grating is given by:	A. $R = N \times m$ B. None of these C. $R = m/N$ D. ...

		D. $R = N/m$
79	Resolving power in m th order diffraction for grating is given by:	A. $R = N/m$ B. $R = m/N$ C. $R = N \times m$ D. None of these
80	To see the minor details of the object by microscope, it should have:	A. High magnifying power B. High resolving power C. An objective of larger focal length D. None of these
81	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
82	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
83	A magnifier gives an image which is:	A. Virtual, inverted B. Real, erect C. Virtual, erect D. Real, inverted
84	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
85	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
86	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
87	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
88	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
89	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
90	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
91	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. $1/p = 1/f + 1/q$
92	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
93	If the object and its image are located at a distance of 5 cm from the focus of a convex lens, the focal length of the lens will be:	A. 5 cm B. 10 cm C. 20 cm D. 25 cm
94	Conventionally, all the distance p , q , f are measured from _____ of the lens:	A. Focus B. Optical center C. Edges D. None of these
95	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
96	The ratio of the diameter of two convex lenses is _____-the ratio of their	A. Greater than B. Less than C. Equal to D. None of these

	focal lengths:	C. Equal to D. None of these
97	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
98	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
99	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
100	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