ECAT Pre General Science Online Test

Sr	Questions	Answers Choice
1	Cosine of an angle is positive in:	A. 2nd quadrant B. 3rd quadrant C. 4th quadrant D. All of these
2	The magnitude of the resultant of two forces may be increased by:	A. Increasing the angle between them B. Decreasing the angle between them C. Drawing a triangle to represent them D. None of these
3	The vector in space has:	A. One component B. Two components C. Three components D. None of these
4	Which of the following is scalar quantity?	A. Electric potential B. Velocity C. Momentum D. Force
5	All trigonometric functions (sine, cosine, tangent etc) are positive in:	A. 1st quadrant B. 2nd quadrant C. 3rd quadrant D. 4th quadrant
6	Two forces each of the magnitude F act perpendicular to each other. The angle made by the resultant force with the horizontal will be:	A. 30° B. 45° C. 60° D. 90°
7	Two forces of 10 N and 8 N are applied simultaneously to a body. the maximum value of their resultant is:	A. 2 N B. - 2 N C. 18 N D. 36 N
8	Two forces each of 10 N act on a body, if the force are inclined at 30° and 60° respectively with x-axis, then x-component of their resultant is:	A. 20 N B. 13.66 N C. 10 N D. 8.66 N
		A. Remains the same

#	Question	Options
9	When a vector is multiplied by a negative number, its direction:	B. Changes C. Changes by 180° D. None of these
10	An vector of 10 N makes an angle of 45° with x-axis. Angle between its rectangular components with be:	A. 45° B. 90° C. 135° D. Zero
11	A vector which has magnitude 'one' is called:	A. Resultant vector B. A unit vector C. Position vector D. None of these
12	A person starts his journey from a point 0, travels 4 Km SW, then 4 Km NW, and finally 4 Km north-east. At what distance is he now from point 0?	A. 0 Km B. 4 Km C. 8 Km D. 12 Km
13	Two vectors to be combined have magnitudes of 60 N and 35 N. Pick the possible answer:	A. 100 N B. 70 N C. 20 N D. Zero
14	A vector of magnitude 5 N is added to a vector of magnitude 8 N while the orientations are changeable. Range of their possible sum will be very from:	A. Zero to 3 N B. 1 N to 13 N C. 13 N to 3 N D. None of these
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16	If the vector 5 N lies along with x-axis, then its component along y-axis will be:	A. Zero B. 5 N C. 7 N D. 10 N
17	The rectangular components of a vector are equal in magnitude when the vector makes and angle _____ with their x-component:	A. 0° B. 30° C. 45°

18	When the magnitude of two component vectors are equal to that of their resultant, then the angle between the components is:	A. 60° B. 90° C. 120° D. 150°
19	If a vector lies in second quadrant, than B_x and B_y are:	A. -,+ B. +,- C. +,+ D. -,-
20	Parallel vectors of same magnitudes:	A. Are equal B. Are unequal C. When added give the some equal to zero D. Give the answer equal to zero
21	The direction of vector in space is specified by:	A. One angle B. Two angles C. Three angles D. None of these
22	The direction of a vector in space requires:	A. X-axis B. X and Y-axes C. XYZ axes D. Y and Z-axes
23	Choose the set of physical quantities, which have both numerical and directional properties:	A. Velocity, mass B. Speed, acceleration C. acceleration weight D. Distance, force
24	The branch of physics which deals with the structure and properties of solids is called:	A. Plasma physics B. Solid state physics C. Any of above D. Astrophysics
25	Density is defined as:	A. Mass per volume B. Volume per mass C. Mass X volume

		D. Mass per length
26	Examples of physical quantities are:	A. Length B. Color C. Effect of music D. All of these
27	In the equation $E=mc^2$ value of c is?	A. 186000 miles per hour B. 186000 miles per sec C. 3×10^8 m/sec D. Both A and C E. Both B and C
28	From sand, we get a material used for construction of computer chips. That material is called:	A. Copper B. Lead C. Silicon D. Germanium
29	From sand, we get a material used for construction with the motion of bodies under the action of forces is called:	A. Optics B. Mechanics C. Thermodynamics D. Astrophysics
30	Electron is a particle whose mass is:	A. Greater than that of a proton B. Smaller than of a proton and greater than mass of neutron C. Smaller than that of proton or neutron D. Greater than that of an atom
31	Physics is one of the branches of:	A. Social sciences B. Physical sciences C. Biological sciences D. Abstract art
32	Branch of physics which deals with the study of stars and galaxies is called:	A. Solid state physics B. Astrophysics C. Molecular physics D. Chemical physics
33	Silicon can be obtained from:	A. Lead B. Uranium C. An isotope of oxygen D. Sand
34	Particles have the mass smallest of following is:	A. Electron B. Proton C. Neutron D. Quark
35	The machines which deals with the objects moving with velocities approaching that of light is called:	A. Relativistic mechanics B. Wave mechanics C. Quantum D. Statics mechanics
36	Astrophysics is a branch of physics, which deals with:	A. Sub-atomic particles B. Stars and galaxies C. Light and sound D. Music
37	The information from far side of the universe are gathered by:	A. Radio telescope B. Microscope C. Telescope D. Spectro scope
38	The study of physics involves?	A. Structure of space and time B. Interaction of electromagnetic radiation with matter C. Both of them D. Chemical changes E. None of them
39	The quantity having dimension of ML^2T^{02} will earth is:	A. 80 sec B. 500 sec C. 1.802×10^4 sec D. Aerophysics
40	Which quantity has different dimension:	A. Work B. Pressure C. Energy D. Torque
41	Addition of 2.189 kg, 11.8 kg and 5.32 kg gives the rounded off answer as:	A. 19.398 B. 19.400 C. 19.4 D. 19.3
28		A. Four B. Three

42	Significant figures in 0.0010 are:	B. Three C. Two D. One
43	Which one is the least multiple:	A. Pico B. Femto C. Nano D. Atto
44	1 gm-cm^{-3} is equal to:	A. 10^3 kg-m^{-3} B. 10^{-3} kg-m^{-3} C. 1 kg-m^{-3} D. 10^6 kg-m^{-1}
45	Light year is a unit of:	A. Time B. Distance C. Velocity D. Intensity of light
46	When a conductor is moved across a magnetic field:	A. Emf induced its similar to that of a battery B. Emf induced gives rise to induced current C. An emf is induced across its ends D. All are correct E. None of these
47	In the equilibrium state, the potential difference between two ends of the conductor moving across a magnetic field is called:	A. Both A and C B. Induced emf C. Both A and B D. Motion emf E. Electrostatic emf
48	In the equilibrium state, the potential difference between two ends of the conductor moving across a magnetic field is called:	A. Motion emf B. Electrostatic emf C. Induced emf D. Both A and B E. Both A and C
49	When a conductor is moved across a magnetic field, the redistribution of charge sets up:	A. Magnetic field B. Electrostatic field C. Electromagnetic field D. All of these E. None of these
50	When a conductor moved with its length parallel to the lines of magnetic fled:	A. An emf is induced across its ends B. Emf induced is similar to that of a battery C. Emf passes through the conductor D. Both A and B E. None of these
51	The product of induced current and the resistance of the wire through which the current is passing is called:	A. Electromagnetic induction B. induced emf C. Induced current D. Self induced E. None of these
52	The unit of induced emf is:	A. Volt B. Nm/As C. Joule coul^{-1} D. Both A and C E. All of these
53	Referring to above figure, a changing current in coil P can be produced:	A. At the instant the switch is closed B. At the instant the switch is opened C. With the help of rheostat D. All of these E. None of these
54	Referring to above figure, due to change in current in the coil P, the change in magnetic flux:	A. Is associated with coil P B. Is associated with coil S C. Causes an induced current is coil S D. All of these E. None of these
55	Referring to above figure, current in coil P falls from its maximum value to zero:	A. At the instant the switch is closed B. At the instant the switch is opened C. When switch is kept open D. When switch is kept closed E. None of these
56	Referring to above figure, current in the coil P grows from zero to its maximum value:	A. At the instant the switch is closed B. At the instant the switch is opened C. When switch is kept open

57	A coil of constant area is placed in a constant magnetic field. An induced current is produced in the coil when:	A. The coil is distorted B. The coil is rotated C. The coil is neither distorted nor rotated D. Both A and B E. None of these
58	Instead of moving the coil towards a magnet, the magnet is moved towards the coil with the same speed. The galvanometer shows current:	A. Of same magnitude in the same direction B. Of different magnitude in the same direction C. Of same magnitude but in opposite direction D. Of different magnitude in the opposite direction E. None of these
59	When there is no relative motion between the magnet and coil, the galvanometer indicates:	A. No current in circuit B. An increasing current C. A decreasing current D. Either B or C
60	The magnitude of induced emf depends upon the:	A. Rate of decrease of magnetic field B. Rate of change of magnetic field C. Rate of increase of magnetic flux D. Constancy of magnetic field E. None of these
61	Micheal Faraday and joseph Henry belong respectively to:	A. USA and England B. England and France C. England and USA D. USA and France E. None of these
62	In magnet-coil experiment, emf can be produced by:	A. Keeping the coil stationary and moving the magnet B. Keeping the magnet stationary and moving the coil C. Relative motion of the loop and magnet D. Any one of above E. All above
63	The induced current in the loop can be increased by:	A. Using a strong magnetic field B. Moving the loop faster C. Replacing the loop by a coil of many turns D. All of above E. None of these
64	The induced current in a conductor depends upon:	A. Resistance of the loop B. Speed with which the conductor moves C. Any of these D. Both A and B E. None of these
65	The phenomenon of generation of induced emf is called:	A. Electrostatic induced B. Magnetic induced C. Electromagnetic induced D. Electric induced E. Both A and C
		A. \Constant magnetic field\ B. \Changing magnetic field\ C. \<span style="font-size: 10.5pt; line-height: 107%; font-family: Arial, sans-serif; background-image: initial;

66	An induced current can be produced by:	background-position: initial; background-size: initial; background-repeat: initial; background-attachment: initial; background-origin: initial; background-clip: initial;">Varying magnetic field D. Constant electric field E. None of these
67	An induced current can be produced by:	A. Constant magnetic field B. Changing magnetic field C. Varying magnetic field D. Constant electric field E. None of these
68	An emf is set up in a conductor when it:	A. Is kept in a magnetic field B. Is kept in an electric field C. Moves across a magnetic field D. Both A and B E. None of these
69	The current produced by moving a loop of wire across a magnetic field is called:	A. Direct current B. Magnetic current C. Alternating current D. Induced current E. None of these
70	Eddy current is produced when:	A. A metal is kept in varying magnetic field B. A metal is kept in steady magnetic field C. A circular coil is placed in a steady magnetic field D. A current is passed through a circular coil
71	Step up transformer has a transformation ratio of 3:2. What is the voltage in secondary, if voltage in primary is 30V:	A. 45 V B. 15 V C. 90 V D. 300 V
72	Which of the following quantities remain constant in step up transformer?	A. Current B. Voltage C. Power D. Heat
73	In a coil current change from 2 to 4 A in .05 s. If the average induced emf is 8V then coefficient of self-inductance is:	A. 0.2 henry B. 0.1 henry C. 0.8 henry D. 0.04 henry
74	The induced emf in a coil is proportional to:	A. Magnetic flux through a coil B. Rate of change of magnetic flux through the coil C. Area of the coil D. Product of magnetic flux and area of the coil
75	What is the coefficient of mutual inductance, when the magnetic flux changes by 2×10^{-2} Wb, and change in current is 0.01 A?	A. 2 H B. 3 H C. 1/2 H D. Zero
76	The device in which induced emf is statically induced emf is:	A. Transformer B. AC generator C. Alternator D. Dynamo
77	For inducting emf in a coil the basic requirement is that:	A. Flux should link the coil B. Change in flux should link the coil C. Coil should form a closed loop D. Both B and C are true

78	A spring of constant k = 0.4 N m^{-1} is to be extended through 10 cm at a place where g = 10 m sec^{-2}. The mass to be suspended should be:	A. 4 gms B. 0.4 gm C. 40 gms D. None of these
79	A body with frequency would complete one vibration in:	A. f seconds B. 1/f seconds C. 1 second D. f^2 second
80	If a given spring of spring constant k is cut into two indentical segments, the spring constant of each segment is:	A. k/2 B. 2 k C. 4 k D. None of these
81	In SHM, there is always a constant ratio between displacement if body and its:	A. Velocity B. Period C. Mass D. Acceleration
82	The number of vibrations in two seconds can be expressed as_____if frequency of vibration is f.	A. f B. 2 f C. 3 f D. 1/2 f
83	If a force of 0.05 N produces an elongation of 20 mm in string, then its spring constant will be:	A. 250 N m^{-1} B. 25 N m^{-1} C. 2.5 N m^{-1} D. None of these
84	If a mass of 10 gm is suspended from a spring of k = 9.8 Nm^{-1}, then the extension will be:	A. 1 cm B. 1 m C. 10 mm D. None of these
85	A particle is moving along a circular path with uniform speed. Its projection will execute_____along the_____of the circle:	A. Circular motion, circumference B. Vibrator, chord C. SHM, diameter D. SHM, circumference
86	The time taken to complete one vibration is called:	A. Frequency B. Amplitude C. Time D. Time period
87	When quarter of a cycle is completed, the phase of vibration is:	A. 90° B. 180° C. 45° D. 360°
88	The body oscillates due to _____ accelerates and overshoots the rest position due to _____:	A. Applied force , inertia B. Restoring force, friction C. Frictional force, inertia D. Restoring force, inertia
		A. Diameter B. Radius

89	Amplitude in SHM is equivalent to_____ in circular motion:	B. Radius C. Circumference D. None of these
90	The graph showing the variation of displacement with time is a:	A. Sine curve B. Straight line C. Parabola D. None of these
91	When a body is vibrating, the displacement from mean position:	A. Increases with time B. Decreases with time C. Changes with time D. None of these
92	The restoring force is _____ amd opposite to the applied force within _____:	A. Equal, elastic limit B. Different, the walls of the laboratory C. Different, elastic limit D. None of these
93	The SI unit of spring constant is identical with that of:	A. Force B. Surface tension C. Pressure D. Loudness
94	Which one of the following is an example of SHM:	A. Motion in a plane B. Motion in a swing C. Motion in a car D. None of these
95	The unit of spring constant is:	A. J-sec B. Metre C. Nm^{-1} D. None of these
96	To and fro motion of a body is about its mean position is known as:	A. Translatory motion B. Vibratory motion C. Rotatory motion D. None of these
97	If the waves produced in a microwave oven are of wave-length 12 cm, then their frequency will be:	A. 2500 MHz B. 0.25 MHz C. 2500 KHz D. None of these
98	Free oscillations are always produced by:	A. An applied force B. Gravitational force C. Restoring force and inertia D. Inertia only
99	An object undergoes SHM. Its maximum equilibrium positions:	A. Maximum B. Half of its maximum value C. Zero D. None
100	Second's pendulum is the pendulum whose time period is:	A. 1 second B. 2 second C. 3 second D. None of these