NAT II Physical Science Physics

Sr	Questions	Answers Choice
1	When n-type of semiconductor is heated	A. Number of electrons increases while that of holes decreases B. Number of holes increases while that of electron decreases C. Number of electrons and holes remains same D. Number of electrons and holes increases equally
2	Band spectrum is produced by	A. H B. He C. H₂ D. Na
3	The modulus of rigidity of a liquid is	A. Zero B. 1 C. Infinity D. A value not one of those mentioned above
4	The unit of electric current 'ampere' is the amount of current flowing through each of two parallel wires 1 m apart and of infinite length will give rise to a force between them equal to	A. 1 N/m B. 2 x 10⁻⁷N/m C. 1 x 10⁻²N/m D. 4 x 10²N/m
5	If the earth were to rotate faster, than its present speed the weight of an object will	A. Increase at the equator but remain unchanged at the poles B. Decrease at the equator but remain unchanged at the poles C. Remain unchanged at the decrease but decrease at the poles D. Remain unchanged at the equator but increase at the poles
6	The mass defect for the nucleus of helium is 0.0303 a.m.u. What is the binding energy per nucleon for helium in MeV?	A. 28 B. 7 C. 4 D. 1
7	For obtaining appreciable extension, the wire should be	A. Short and thin B. Long and thin C. Short and thick D. Long and thick
8	Angular momentum is	A. Vector (axial) B. Vector (polar) C. Scalar D. None of these
9	Huygen's wave theory of light cannot explain	A. Diffraction B. Interference C. Polarization D. Photoelectric effect
10	In an A.C. circuit, a resistance of R ohm is connected in series with an inductance L. If phase angle between voltage and current be 45°, the value of inductive reactance will be	A. R/4 B. R/2 C. R D. Cannot be found with the given data
11	For production of beats the two sources must have	A. Different frequencies and same amplitude B. Different frequencies C. Different frequencies, same amplitude and same phase D. Different frequencies and same phase
12	A wire is stretched to double of its length. The strain is	A. 2 B. 1 C. zero D. 0.5
13	A voltmeter has resistance of 2000 ohms and it can measure up to 2V. If we want to	A. 2000 ohm B. 4000 ohm

	increase its range to 10V then required resistance in series will be	C. 6000 ohm D. 8000 ohm
14	Choose the correct statement	A. Both an ammeter and voltmeter should have small resistance B. Both an ammeter and a voltmeter should have large resistance C. An ammeter should have large resistance and a voltmeter should have small resistance D. An ammeter should have small resistance and a voltmeter should have large resistance
15	In case of p-n junction diode, at high value of reverse bias, the current rises sharply. The value of reverse bias is known as:	A. Cut off voltage B. Zener voltage C. Inverse voltage D. Critical voltage
16	A motorist travels A to B at a speed at 40 km/h and returns at speed of 60 km/h. His average speed will be	A. 40 km/h B. 48 km/h C. 50 km/h D. 60 km/h
17	Which of the following sources give discrete emission spectrum?	A. Incandescent electric bulb B. Sun C. Mercury vapour lamp D. Candle
18	The sum of the magnitude of two forces acting at a point is 18 and the magnitude of their resultant is 12. If the resultant is at 90°with the force of the smaller magnitude, then their magnitudes are:	A. 3, 15 B. 4, 14 C. 5, 13 D. 6, 12
19	The velocity of a particle at an instant is 10 m/s and after 5s the velocity of the particle is 20 m/s. The velocity 3s before in m/s is:	A. 8 B. 4 C. 6 D. 7
20	Blood has a density	A. Equal to water B. Greater then water C. Lesser then water D. None of these
21	What remains constant when the earth revolves around the sun?	A. Angular momentum B. Linear momentum C. Angular kinetic energy D. Linear kinetic energy
22	The motion without consideration of its cause is studied in	A. Kinematics B. Mechanics C. Statics D. Modern Physics
23	The unit of inductance is equivalent to	A. V x s/A B. V x A/s C. A x s/v D. V/A x s
24	The incorrect statement regarding the lines of force of the magnetic field B is	A. Magnetic intensity is a measure of lines of force passing through unit area held normal to it B. Magnetic lines of force form a close curve C. Inside a magnet, its magnetic lines of force move from north pole of a magnet towards its south pole D. Due to a magnet magnetic lines of force never cut each other
25	To get a resultant displacement of 10 m, two displacement vectors of magnitude 6 m and 8 m should be combined	A. Parallel B. Antiparallel C. At angle 60° D. Perpendicular to each other
26	A (100 W, 200 V) bulb is connected to a 160 V power supply. The power consumption would be	A. 64 W B. 80 W C. 100 W D. 125 W
27	In a simple harmonic motion (SHM), which of the following does not hold?	A. To force on the particle is maximum at the ends B. The acceleration in minimum at the mean position C. The potential energy is maximum at the mean position D. The kinetic energy is maximum at

		D. The kinetic energy is maximum at the mean position
28	Shunt required in an ammeter of resistance R to decrease its deflection from 30 ampere to 10 ampere is	A. R/4 B. R/3 C. R/2 D. R
29	What will be the duration of the day and night (in hour) if the diameter of the earth is suddenly reduced to half its original value, the mass remaining constant?	A. 12 B. 6 C. 3 D. 2
30	Who explained the origin of the Fraunhoffer lines?	A. Fraunhoffer B. Kirchhoff C. Fresnel D. Snell
31	When sound waves travel from air to water which of these remains constant?	A. Velocity B. Frequency C. Wavelength D. All the above
32	In which case application of angular velocity is useful?	A. When a body is rotating B. When velocity of body is in a straight line C. When velocity is in a straight line D. None of these
33	The primary winding of transformer has 500 turns whereas its secondary has 5000 turns. The primary is connected to an a.c. supply of 20 V, 50 Hz. The secondary will have an output of	A. 200V, 50 Hz B. 2V, 50 Hz C. 200V, 500 Hz D. 2V, 5 Hz
34	Surface tension of water is due to	A. Inter molecular attractions B. Intermolecular spaces C. Inter molecular repulsion D. None of above
35	A train of 150 m length is going towards north direction at a speed of 10 ms^{-1}. A parrot flies at a speed of 5 ms^{-1}towards south direction parallel to the railway track. The time taken by the parrot to cross the train is equal to	A. 12 s B. 8 s C. 15 s D. 10 s
36	A man pushes a wall but fails to displace it. He does:	A. Negative work B. Maximum positive work C. Positive work but not maximum D. No work
37	Quantity that remains unchanged in a transformer is	A. Voltage B. Current C. Frequency D. None of these
38	A boy is dropped from a tower with zero velocity, reaches ground in 4s. The height of the tower is about	A. 80 m B. 20 m C. 160 m D. 40 m
39	The structure of solids is investigated by using	A. Cosmic Rays B. X-rays C. Intra red Radiation D. γ-rays
40	A bullet is shot from a rifle. As a result the rifle recoils. The kinetic energy of rifle as compared to that of bullet is	A. Less B. Greater C. Equal D. Cannot be concluded
41	A planet is observed by an astronomical refracting telescope having an objective of focal length 16 m and an eyepiece of focal length 2 cm.	A. The distance between the objective and the eyepiece is 8 m B. The angular magnification of the planet is 200 C. The image of the planet is inverted D. The objective is smaller than the eyepiece
42	A 220 V, 50 Hz. A.C. source is connected to an inductance of 0.2 H and a resistance of 20 ohm in series. What is the current in the circuit?	A. 10 A B. 5 A C. 33.3 A D. 3.33 A
43	To explain his theory Bohr used	A. Conservation of linear momentum B. Conservation of angular momentum C. Conservation of quantum frequency D. Conservation of energy

44	Planck's constant has the dimensions of:	A. Energy B. Momentum C. Frequency D. Angular momentum
45	If the amplitude of sound is doubled and the frequency reduced to one-fourth, the intensity of sound at the same point will be	A. Increasing by a factor of 2 B. Decreasing by a factor of 2 C. Decreasing by a factor of 4 D. Unchanged
46	Steel is preferred for making springs over copper. Why?	A. Steel is cheaper B. Young's modulus of steel is more than that of copper C. Young's modulus of copper is more than that of steel D. Steel is less likely ot be oxidized
47	A photocell with a constant p.d. of V volt across it illuminated by a point source from a distance of 25 cm. When the source is moved to a distance of 1m, the electrons emitted by the photocell	A. Carry 1/4th their previous energy B. Are 1/16th as numerous as before C. Are 1/4th as numerous as before D. Carry 1/4th their previous momentum
48	What is the average energy of N molecules of monoatomic gas?	A. 1/2 NKT B. NKT C. 3/2 NKT D. 5/2 NKT
49	A force of 10N is acting along y-axis. Its component along x-axis is	A. 10N B. 20N C. 100N D. Zero N
50	When boron is added as an impurity to silicon, the resulting material is.	A. n type conductor B. n type semiconductor C. p-type conductor D. p-type semiconductor
51	In which region of electromagnetic spectrum does the Lyman series of hydrogen atom lie	A. Ultraviolet B. Infrared C. Visible D. X-ray
52	Which of the following particles would experience the largest magnetic force when projected with the same velocity perpendicular to a magnetic field?	A. Proton B. Electron C. He⁺ D. Li⁺
53	The time period of a simple pendulum is 2 seconds. If its length is increased by 4 times, then its period becomes	A. 16 s B. 12 s C. 8 s D. 4 s
54	A piece of fuse wire melts when a current of 15 ampere flows through it. With this current, if it dissipates 22.5 W, the resistance of fuse wire will be	A. Zero B. 10 ohm C. 1 ohm D. 0.10 ohm
55	A sun rise or sun set, the sun looks reddish because:	A. The sun is coldest at these times B. Of the effects of reflection and refraction C. The sun is hottest at these times D. Of the scattering of light
56	Two forces are acting together on an object. The magnitude of their resultant is minimum when the angle between the force is	A. 0° B. 60° C. 120° D. 180°
57	In an L-R circuit, time constant is that time in which current grows from zero to the value	A. 0.63 I_o B. 0.50 I_o C. 0.37 I_o D. I_o
58	The sieman is the SI unit of	A. Resistance B. Specific Resistance C. Conductance D. Inductance
		A. Electrical energy to light energy

59	A photoelectric cell coverts	B. Light energy to light energy C. Light energy to electrical energy D. Light energy to elastic energy
60	According to Stoke's law, drag force depends on	A. Initial velocity B. Final velocity C. Terminal velocity D. Instantaneous velocity
61	Which of the following lists of physical quantities consists only of vectors:	A. Time, temperature, velocity B. Force, volume, momentum C. Velocity, acceleration, mass D. Force, acceleration, velocity
62	The dot product of two vectors is negative when	A. They are parallel vectors B. They are anti-parallel vectors C. They are perpendicular vectors D. None of the above is correct
63	With the increase of temperature viscosity	A. Increase B. Decrease C. Remains same D. Doubles
64	The force between two charges 0.06 m apart is 5 N. If each charge is moved towards the other by 0.01 m, then the force between them will become	A. 7.20 N B. 11.25 N C. 22.50 N D. 45.00
65	The mass of a proton is 1847 times that of an electron. An electron and a proton are projected into a uniform electric field in a direction at right angles to the direction of the field with the same initial kinetic energy.The	A. Both the trajectories will be equally curved B. The proton trajectory will be less curved than the electron trajectory C. The electron trajectory will be less curved than the proton trajectory D. The relative curving of the trajectories will be dependent on the value of the initial kinetic energy
66	The initial velocity of a body moving along a straight line in 7 m/s. It has a uniform acceleration of 4 m/s^2. The distance covered by the body in the 5th second of its motion is	A. 25 m B. 35 m C. 50 m D. 85 m
67	The part of a transistor which is heavily doped to produce large number of majority carriers is	A. Emitter B. Base C. Collector D. Any of the above depending on nature of transistor
68	A body moving in circular motion with constant speed has	A. Constant velocity B. Constant acceleration C. Constant kinetic energy D. Constant displacement
69	A moving charge will gain energy due to the application of	A. Electric field B. Magnetic field C. Both of these D. None of these
70	A person standing on a rotating platform has his hands lowered. He suddenly outstretches his arms. The angular momentum	A. Becomes zero B. Increases C. Decreases D. Remains the same
71	When we apply reverse bias to a junction diode, it	A. Lowers the potential barrier B. Raise the potential barrier C. Increase the majority carrier current D. Increase the minority carrier current
72	Velocity of sound in a diatomic as is 300 m/sec, what is its rms velocity?	A. 400 m/sec B. 40 m/sec C. 430 m/sec D. 300 m/sec
73	A prism splits a beam of white light into its seven constituent colors. This is so because	A. Phase of different colors is different B. Amplitude of different colors is different C. Energy of different colors is different D. Velocity of different colors is different
74	Which of the following is a scalar quantity?	A. Density B. Displacement C. Torque D. Weight
		A. Decrease B. Increase

75	How does the Young's modulus vary with the increase of temperature?	B. Increases C. Remains constant D. First increases and then decreases
76	If the metal bob is a simple pendulum is replaced by a wooden bob, then its time period will	A. Increas B. Decreases C. Remain the same D. First A then B
77	According to the Hooke's law the force required to change the length of a wire by 'l' is proportional to	A. l⁻² B. l⁻¹ C. l D. l²
78	Light appears to travel in straight lines since	A. It is not absorbed by the atmosphere B. It is reflected by the atmosphere C. Its wavelength is very small D. Its velocity is very large
79	The smooth or steady stream-line flow is know as	A. Laminar flow B. Turbulent flow C. Both a and b D. None of the above
80	A couple produces	A. Purely linear motion B. Purely rotational motion C. Linear and rotational motion D. No motion
81	What will be the ratio of the distance moved by a freely falling body from rest in 4th and 5th seconds of journey?	A. 4 : 5 B. 7 : 9 C. 16 : 25 D. 1 : 1
82	If yellow light emitted by sodium lamp in Young's double slit experiment is replaced by monochromatic blue light of the same intensity	A. Fringe width will decrease B. Fringe width will increase C. The fringe width will remain unchanged D. Fringes will becomes less intense
83	According to classical theory the proposed circular path of an electron in Rutherford model of atom will be	A. Circular B. Straight line C. Parabolic D. Spiral
84	With the propagation of a longitudinal wave through a material medium, the quantities transmitted in the propagation direction are	A. Energy, momentum and mass B. Energy C. Energy and mass D. Energy and linear momentum
85	The conductivity of a superconductor is	A. Infinite B. Very large C. Very small D. Zero
86	A cable breaks if stretched by more than 2 mm. It is cut into two equal parts. How much either part can be stretched without breaking?	A. 0.25 m B. 0.5 m C. 1 mm D. 2 mm
87	The nucleus 6C12 absorbs an energetic neutron and emits a beta particle (β). The resulting nucleus is	A. ₇N¹⁴ B. ₅B¹³ C. ₇N¹³ D. ₆C¹³
88	One cannot see fog because	A. Fog absorbs light B. The refractive index of fog is infinity C. Light suffers total reflection at the droplet in a fog D. Light is scattered by the droplet in fog
89	A particle is moving in a uniform magnetic filed, then	A. its momentum changes but total energy remains the same B. Both momentum and total energy remains the same C. Both changes D. Total energy change but momentum remains
90	The direction of induced current is such that it opposes the very cause that has produced it. This is the law of	A. Lenz B. Faraday C. Kirchoff D. Fleming
91	If the dot product of two non-zero vectors vanishes, the vectors will be	A. In the same direction B. Opposite to each other C. Perpendicular to each other

		D. Zero
92	Two electric bulbs of 200 W and 100 W have same voltage. If $R_1$and R_2be their resistance respectively then	A. R₁=2R₂ B. R₂=2R₁ C. R₂=4R₁ D. R₁=4R₂
93	The percentage errors in the measurements of mass and speed are 2% and 3% respectively. How much will be the maximum error in the estimate of the kinetic energy obtained by measuring mass and speed	A. 11% B. 8% C. 5% D. 1%
94	When a hydrogen atom is bombarded, the atom is excited to the n = 4 state of hydrogen atom. The energy released when the atom falls from n = 4 state to the ground state is	A. 1.275 eV B. 12.75 eV C. 5 eV D. 8 eV
95	In a voltmeter the conduction takes place due to	A. Electrons only B. Holes only C. Electrons and holes D. Electrons and ions
96	A converging lens is used to form an image on a screen. When the upper half of the lens is covered by an opaque screen	A. Half the image will disappear B. No change either in size or in intensity C. Intensity of image will increase D. Intensity of the image will decrease
97	The dimensional formula of torque is:	A. [ML²T⁻²] B. {MLT⁻²] C. [ML⁻¹T⁻²] D. [ML⁻²T⁻²]
98	A fly is sitting on the objective of a telescope pointed towards the moon. What effect is expected on the photography of the moon taken through the telescope?	A. The entire of view blocked B. There is an image of the fly on the photography C. There is no effect at all D. There is a reduction in the intensity of the image
99	In a simple harmonic motion the kinetic energy (KE) and the potential energy (PE), are such that throughout the motion	A. KE remains constant B. PE remains constant C. KE/PE is constant D. KE+PE remains constant
100	When light wavelength 300 nm (nanometer) falls on a photoelectric emitter, photoelectrons are liberated. For another emitter, however, light of 600 nm wavelength is sufficient for creating photoemission. What is the ratio of the work functions of the two emitters?	A. 1 : 2 B. 2 : 1 C. 4 : 1 D. 1 : 4
101	A particle moving in a magnetic field has increase in its velocity, then its radius of the circle	A. Decreases B. Increases C. Remains the same D. Becomes half
102	The velocity of falling raindrops attains limited value because of	A. Up thrust of air B. Viscous force exerted by air C. Surface tension effect D. Air currents atmosphere
103	When the length of a microscope tube increase, its magnifying power	A. Decreases B. Increases C. Does not Change D. May increase or decrease depending on the observer and the place of observation
104	Bernoulli's equation is based upon law of conservation	A. Mass B. Momentum C. Energy D. None of these
105	The henry is the unit for	A. Resistance B. Magnetic flux C. Magnetic field D. Inductance
106	A particle moves along a circular path under the action of a force. The work done by the force is	A. Zero B. Positive and non-zero C. Negative and non zero D. None of the above
107	In Young's experiment, two coherent sources are placed 0.90 mm apart and the fringes are observed one metre away. If its produces the second dark fringe at a distance of 1 mm from the central fringe, the wavelength of monochromatic light used would be	A. 60 x 10⁻⁴cm B. 10 x 10⁻⁴cm C. 10 x 10⁻⁵cm D. 6 x 10⁻⁵cm

108	The number of turns in the primary coil of a transformer is 200 and the number of turns in the secondary coil is 10. If 240 volts ac are applied to the primary, the output the secondary will be	A. 48A B. 24V C. 12V D. 6V
109	The temperature at which the speed of sound becomes double as was at 27°C is	A. 273°C B. 0°C C. 927°C D. 1027°C
110	The magnetic moment of a circular coil carrying current is	A. Directly proportional to the length of the wire in the coil B. Inversely proportional to the length of the wire in the coil C. Directly proportional to the square of the length of the wire in the coil D. Inversely proportional to the square of the length of the wire in the coil
111	A point charge Q is placed at the mid-point of a line joining two charges, 4q and q. If the net force on charge q is zero, then Q must be equal to	A. -q B. +q C. -2q D. +4q
112	If tube length of astronomical telescope is 105 cm and magnifying power is 20 for normal setting. Calculate the focal length of objective	A. 100 cm B. 10 cm C. 20 cm D. 25 cm
113	The volt/metre is the unit of:	A. Potential B. Work C. Force D. Electric field intensity
114	In a common base transistor circuit, the current gain is 0.98. On changing the emitter current by 5.00 mA, the change in collector current is	A. 0.916 mA B. 2.45 mA C. 4.9 mA D. 5.1 mA
115	A body moves a distance of 10 m along a straight line under the action of a force of 5 Newton's. If the work done is 25 joules, the angle which the force takes with the direction of motion of the body is:	A. 0° B. 30° C. 60° D. 90°
116	Two sources of sound are said to be coherent if	A. They produce sounds of equal intensity B. They produce sounds of equal frequency C. They produce sound waves vibrating with the same phase D. They produce sound waves with zero or constant phase different all instant of time
117	In a Millikan's oil drop experiment the charge on an oil drop is calculated to be 6.35 x 10^{-19}C. The number of excess electrons on the drop is	A. 3.9 B. 4 C. 4.2 D. 6
118	The frequency of the incident light falling on a photosensitive metal plate is doubled, the kinetic energy of the emitted photoelectrons is	A. Double the earlier value B. Unchanged C. More than doubled D. Less than doubled
119	A monochromatic source of light is placed at a large distance d from a metal surface. Photoelectrons are ejected at rate n, kinetic energy being E. If the source is brought nearer to distance d/2, the rate and kinetic energy per photoelectron become nearly	A. 2n and 2E B. 4n and 4E C. 4n and E D. N and 4E
120	Which one of the following phenomena is not explained by Huygen's construction of wavefront?	A. Refraction B. Reflection C. Diffraction D. Origin of spectra

121	The half-life of a radio-isotope is 5 years. The fraction of atoms decayed in this substance after 15 years will be	A. 1 B. 3/4 C. 7/8 D. 5/8
122	A lens behaves as a converging lens in air and a diverging lens in water. The refractive index of the material is	A. Equal to unity B. Equal to 1.33 C. Between unity and 1.33 D. Greater than 1.33
123	An ideal choked (used along with fluorescent tube) would be	A. A pure resistor B. A pure capacitor C. A pure inductor D. A combination of an inductor and a capacitor
124	The angle between rectangular components of a vector is	A. 0° B. 60° C. 90° D. 120°
125	The peak voltage in 220 volt A.C. supply is nearly	A. 220 volt B. 253 volt C. 311 volt D. 440 volt
126	A p-n junction has a thickness of the order of:	A. 1 cm B. 1 mm C. 10⁻⁶cm D. 10⁻¹²cm
127	A cable that can support a load W is cut into two equal parts. The maximum load that can be supported by either part is:	A. W/4 B. W/2 C. W D. 2W
128	The product of the pressure and volume of an ideal gas is	A. A constant B. Approximately equal to the universal gas constant C. Directly proportional to its temperature D. Inversely proportional to its temperature
129	Radio waves of constant amplitude can be generated with	A. Rectifier B. Filter C. FET D. oscillator
130	A wire of radius r has resistance R, It it is stretched to a wire of r/2 radius, then the resistance becomes	A. 2R B. 4R C. 16R D. Zero
131	As the electron in Bohr orbit of hydrogen atom passes from stat n = 2 to n = 1, the kinetic energy K and potential energy U change as	A. K two fold, U also two fold B. K four fold, U also four fold C. K four fold, U two fold D. K two fold, U four fold
132	An object is placed at a distance of f/2 from a convex lens. The image will be	A. At one of the foci, virtual and double its size B. At, 3f/2, real and inverted C. At 2f, virtual and erect D. At f, real and inverted
133	Copper and germanium are cooled to 70K from room temperature, then	A. Resistance of copper increases while that of germanium decreases B. Resistance of copper decreases while that of germanium increases C. Resistance of both decreases D. Resistance of both increases
134	Which of the following is not thermo dynamical function?	A. Enthalpy B. Work done C. Gibb's energy D. Internal energy
135	The length of a telescope is 36 cm. The focal lengths of its lenses can be	A. 30 cm, 6 cm B. -30 cm, -6 cm C. 30 cm, -6cm D. -30cm, 6cm

		D. -30cm, 60cm
136	If the period of oscillation of mass (M) suspended from a spring is 2s, then the period of mass 4M will be	A. 1 s B. 2 s C. 3 s D. 4 s
137	A charge Q is divided into two parts q and Q - q and separated by a distance R. The force of repulsion between them will be maximum when:	A. q = Q/4 B. q = Q/2 C. q = Q D. None of these
138	Which of the following four statement is false?	A. A body can have zero velocity and still be accelerated B. A body can have a constant velocity and still have a varying speed C. A body can have a constant speed and still have a varying velocity D. The direction of the velocity of a body can change when its acceleration is constant
139	To increase the magnification of a telescope	A. The objective lens should be of large focal length and eyepiece should be of short focal length B. The objective and eyepiece both should be of large focal lengths C. Both the objective and eyepiece should be of smaller lengths D. The objective should be small focal length and eyepiece should be of large focal length
140	A 50-volt battery is connected across 10-ohm resistor. The current is 4.5 A. The internal resistance of the battery is	A. Zero B. 0.5 ohm C. 1.1 ohm D. 5.0 ohm
141	Boyle's law is applicable in	A. Isochoric process B. Isothermal process C. Isobaric process D. Isotonic process
142	A body of mass 2 kg is thrown up vertically with K.E. of 490 joules. If the acceleration due to gravity is 9.8 m/s^2, the height at which the K.E, of the body becomes half its original value is given by:	A. 50 m B. 12.5 m C. 25 m D. 10 m
143	Absolute temperature can be calculated by	A. Mean square velocity B. Motion of the molecule C. Both A and B D. None of these
144	At a certain instant a stationary transverse wave is found to have maximum kinetic energy. The appearance of string of that instant is:	A. Sinusoidal shape with amplitude A/3 B. Sinusoidal shape with amplitude A/2 C. Sinusoidal shape with amplitude A D. Straight line
145	At constant volume temperature is increased. Then	A. Collision on walls will be less B. Number of collisions per unit time will increase C. Collisions will be in straight lines D. Collisions will not change
146	The excess (equal in number) of electrons that must be placed on each of two small spheres spaced 3 cm apart, with force of repulsion between the spheres to be 10^{-19}N, is	A. 25 B. 225 C. 625 D. 1250
147	If 2.2 kilowatt power is transmitted through a 10 ohm line at 22000 volt, the power loss in the form of heat will be	A. 0.1 watt B. 1 watt C. 10 watt D. 100 watt
148	Which of the modulus of elasticity is involved in compression a rod to decrease its length?	A. Young's modulus B. Bulk modulus C. Modulus of rigidity D. None of the above
149	Energy is stored in the choke coil in the form of	A. Heat B. Magnetic energy C. Electric energy D. Electro-magnetic energy
150	When the length of a microscope tube increases, its magnifying power	A. Decreases B. Increases C. May increases or decreases depending on the observer and the

		place of observation D. Does not change
151	The number of translation degrees of freedom for a diatomic gas is	A. 2 B. 3 C. 5 D. 6
152	Mechanical waves on the surfaces of a liquid are	A. Transverse B. Longitudinal C. Torsional D. both transverse and longitudinal
153	Which one of the following is a simple harmonic motion?	A. Wave moving through a string fixed at both ends B. Earth spinning about its own axis C. Ball bouncing between two rigid vertical walls D. Particle moving in a circle with uniform speed
154	The nuclear model of atom was proposed by	A. J.J Thomson B. E. Rutherford C. Neil Bohr D. Summerfield
155	The average binding energy of a nucleus inside an atomic nucleus is about	A. 8 MeV B. 8 eV C. 8 Joules D. 8 ergs
156	The twinkling of stars is due to	A. The fact that stars do not emit light continuously B. The refractive index of the earth's atmosphere fluctuate C. Intermittent absorption of star light by its own atmosphere D. None of these
157	If a diamagnetic substance is brought near north or south pole of a bar magnet it is	A. Attracted by the poles B. Repelled by the poles C. Repelled by north pole and attracted by the south pole D. Attracted by the north pole and repelled by the south pole
158	A ten-ohm electric heater operates on a 110 V line. Calculate the rate at which it develops heat in watts:	A. 1310 W B. 670 W C. 810 W D. 1210 W
159	A conducting wire is drawn to double its length. Final resistivity of the material will be	A. Double of the original one B. Half of the original one C. One-fourth of the original one D. Same as original one
160	Which quantity is increased in step-down transformer?	A. Current B. Voltage C. Power D. Frequency
161	Centre of mass is a point	A. Which is geometric centre of a body B. From which distance of particles are same C. Where the whole mass of the body is supposed to be centered D. Which is the origin of reference frame
162	In Which case does the potential energy decreases?	A. On compressing a spring B. On stretching a spring C. One moving a body against gravitational force D. One the rising of an air bubble in water
163	All of the following statements are correct except	A. The total focal length of astronomical telescope is the sum of the focal lengths of its two lenses B. The image formed by the astronomical telescope is always erect because the effect of the combination of the two lenses is divergent C. The magnification of an astronomical telescope can increases by decreasing the focal length of the eyepiece D. The magnifying power of the

		refracting type of astronomical telescope is the ratio of the focal length of the objective to that of the eye piece
164	Ball pen function on the principle of	A. Viscosity B. Boyle's law C. Gravitational force D. Surface tension
165	There are discrete energy levels in atoms. It was first experimentally demonstrated by	A. Rutherford's experiment B. Franck Hertz experiment C. Marsden's experiment D. Somerfield experiment
166	The dimensional formula for the modulus of elasticity is same as that for:	A. Stress B. Strain C. Velocity D. Surface tension
167	Electrons in the atom are held in the atom due to	A. Coulomb forces B. Nuclear forces C. Gravitational forces D. Van der Waal's forces
168	To make the frequency double of an oscillator, we have to	A. Double the mass B. Half the mass C. Quadruple the mass D. Reduce the mass to one fourth
169	A person standing near the track of a fast moving train has tendency to fall towards it because of	A. Vibration due to motion of train B. Gravitation force of attraction between person and trains C. The high speed of train D. Some other effect
170	Ultra-violet radiation of 6.2 eV falls on an aluminium surface. K.E. of fastest electron emitted is (Work function = 4.2 eV)	A. 3.2 x 10-21 J B. 3.2 x 10-19 J C. 7 x 10-25 J D. 9 x 10-32 J
171	The contrast in the fringes in any interference pattern depends on	A. Fringe width B. Intensity ratio of the sources C. Distance between the slits D. Wavelength
172	What remains constant in the field of central force?	A. Potential energy B. Kinetic energy C. Angular momentum D. Linear momentum
173	How much water a pump of 2kW can raise in one minute to a height of 10 m, take g = 10 m/s^2?	A. 1000 liters B. 1200 liters C. 100 liters D. 2000 liters
174	Two forces of 10N and 15N are acting simultaneously on an object in the same direction. Their resultant is	A. Zero B. 5N C. 25N D. 150N
175	A pendulum clock set to give correct time in Karachi is taken to Quetta. It would give correct time if	A. The mass of the pendulum is increased B. The mass of the pendulum is decreased C. The length of the pendulum is increased D. The length of the pendulum is decreased
176	In which of the following states does the incandescent substance give continuous spectrum?	A. Vapours in atomic state B. Vapours in molecular state C. Solid or fluid in bulk state D. Solid or fluid in plasma state
177	The essential distinction between X-rays andγ-rays is that	A. γ-rays have smaller wavelength than X-rays B. γ-rays emanate from nucleus while X-rays emanate from outer part of the atom C. γ-rays have greater ionizing power than X-rays D. <span style="color: rgb(34, 34, 34); font-family: arial, sans-serif; font-size:

		font-family: arial, sans-serif; font-size: small;">γ-rays are more penetrating than X-rays
178	Which of the following is the only vector quantity?	A. Temperature B. Energy C. Power D. Momentum
179	Which one of the following phenomena is not explained by Hugen's construction of wavefront?	A. Refraction B. Reflection C. Diffraction D. Origin of sepectra
180	A 2 kg body and a 3 kg body have equal momentum. If the kinetic energy of 3 kg body is 10 J, the KE of 2 kg body will be	A. 6.66 J B. 15 J C. 22.5 J D. 45 J
181	At 0°K which of the following properties of a gas will be zero?	A. Kinetic energy B. Potential energy C. Vibrational energy D. Density
182	A capacitor acts as an infinite resistance for	A. AC B. DC C. Both AC and DC D. Neither AC nor DC
183	Two point charges A and B separated by a distance R attract each other with a force of 12 x 10^{-3}N. The force between A and B when the charges on them are doubled and distance is halved	A. 1.92 N B. 19.2 N C. 12 N D. 0.192 N
184	The fundamental unit which has same power in the dimensional formula of surface tension and viscosity is:	A. Mass B. Length C. Time D. None