General Science Model Test Questions 25 With Answers [Physics - 10]

1. 1) Dynamic lift of aeroplane is based on the principle of Bernoulli's theorem.

   2) Glass is less elastic than rubber.

   3) For a system free from external forces, linear momentum of the system remains constant.

   Which of the above statement is/are wrong?

   (A) (2) only (B) Both (2) and (3)

   (C) (3) only (D) Both (1) and (2)

2. A rocket 100m. long at rest starts to move with uniform motion of 0.8 C. What is its length as seen by an observer at rest?

   (A) 60 cm. (B) 80 cm. (C) 100 cm. (D) 0

3. Which of the following has the highest ionizing power?

   (A) X-rays **(B) Alpha rays** (C) Beta rays (D) Gamma rays

4. Sound waves from a sounding car are

   (A) Transverse waves **(B) Longitudinal waves**

   (C) Ultrasonic waves (D) Stationary waves

5. Cycle dynamo converts

   (A) Mechanical energy into thermal energy

   (B) Mechanical energy into electrical energy

   (C) Electrical energy into light energy

   (D) Electrical energy into thermal energy

6. Which of these connected in parallel in a circuit will produce undamped oscillations?

   (A) R, L (Resistance, Inductance) (B) R, C (Resistance, capacitance)

   (C) C, L (Capacitance, Inductance) (D) R, L and C (Resistance, Inductance and Capacitance)

7. Which of the following statements are correct?

   In an isothermal process,

   a) The temperature of the gas remain constant

b) The gas does not take any heat from the surroundings.
c) The internal energy of the gas remains constant.
d) The pressure and volume of the gas remains constant.

(A) (b) and (c) are correct (B) (c) and (d) are correct

(C) (a) and (c) are correct (D) (a) and (d) are correct

8. Rutherford's experiments on scattering of alpha particles by thin foils established that

I. most of the mass of an atom is located in its nucleus

II. the nucleus of an atom has a positive charge

III. the nucleus of an atom contains protons and neutrons

IV. the electrons revolve around the nucleus of an atom

Choose the right answer:

(A) I and III are correct (B) II and III are correct

(C) III and IV are correct **(D) I and II are correct**

9. A Voltameter is an instrument used to measure

(A) Voltage (B) E.m.f of a cell

(C) Current **(D) Electrochemical equivalent**

10. The deviation of the charge distribution of a nucleus from spherical symmetry can be estimated by measuring

(A) Electric change (B) Electric dipole momet

(C) Magnetic dipole moment **(D) Electric quadrupole moment**

11. A patient was prescribed a lens of +2 dioptre for correcting his vision. What kind of lens does he need?

(A) Concave lens of focal length 0.5 m **(B) Convex lens of focal length 0.5 m**

(C) Concave lens of focal length 2.0 m (D) Convex lens of focal length 2.0 m

12. Which of the following physical quantities have same dimensions of $ML^2T^{-2}K^{-1}$?

(A) Gas constant, Boltzmann constant, Mass

(B) Thermal conductivity, Resistivity, Gas constant

(C) Pressure, Volume, Avagadro number

(D) Thermal capacity, Gas constant, Blotzmann constant

13. An electronic circuit for generating alternating current of a desired frequency is

(A) Amplifier (B) Modulator (C) Detector **(D) Oscillator**

14. A body weighs 900 kg on the surface of the earth. What will be its mass in a planet of $\frac{1}{9}^{th}$ the mass of the earth and half the radius of the earth?

(A) 20.5 kg **(B) 400 kg** (C) 200 kg (D) 100 kg

15. Modulus of elasticity is

(A) Strain / stress **(B) Stress / strain** (C) Stress x strain (D) Stress – strain

16. When the heat is conducted from one place to another place without any medium, then such a process of heat conduction is known as

(A) Conduction of heat (B) Convection of heat

(C) Vaporization of heat **(D) Radiation of heat**

17. The potential at which a silicon diode starts to conduct is

(A) 0.3 V **(B) 0.7 V** (C) 1.4 V (D) 2.8 V

18. The angular speed of a planet revolving round the sun depends

(A) On the radius of the orbit only

(B) On the mass of the planet only

(C) On both the radius and mass of the planet

(D) Inversely on the square root of the cube of the radius of the orbit only

19. If power of a lens is -0.5 dioptre focal length and type of lens is

(A) 2 m, concave (B) 2 m, convex

(C) 50 cm, concave (D) 50 m, convex

20. Find the odd one cut:

Related with heat in one action.

(A) Conduction (B) Convection **(C) Absorption** (D) Radiation

21. Match the following:

(a) Force 1. Watt

(b)	Momentum	2. Joule
(c)	Power	3. $Kg.m.s^{-1}$
(d)	Energy	4. Newton

Codes:

	a	b	c	d
(A)	4	1	2	3
(B)	3	2	1	4
(C)	3	1	2	4
(D)	**4**	**3**	**1**	**2**

22. Choose the correct one:

If kerosene, water and mercury is taken in a same glass tumbler, arrange the position of them from the top to the bottom of the glass tumbler.

(A) Mercury, Kerosene, Water **(B) Kerosene, Water, Mercury**

(C) Water, Mercury, Kerosene (D) Kerosene, Mercury, Water

23. The percentage of Gold in 22 Carat is

(A) 91.67% (B) 75% (C) 67.91% (D) 96.17%

24. Match the physical quantities in column I with their SI units in column II and choose the correct answer using the below given codes:

	Column - I	Column - II
(a)	Pressure	1. Kgm^{-3}
(b)	Surface tension	2. Nm^{-1}
(c)	Surface energy	3. Jm^{-2}
(d)	Density	4. Pa

Codes:

	a	b	c	d
(A)	1	2	4	3
(B)	**4**	**2**	**3**	**1**
(C)	2	3	4	1
(D)	3	4	1	2

25. Velocity of light is

(A) More in air (B) More in glass

(C) Same in air and glass (D) Neither (A) nor (B)

26. Ampere hour is a unit of

(A) Power (B) Energy **(C) Charge** (D) Current

27.

28. For an adiabatic process, which is the wrong statement?

(A) PV = Constant (B) PV^{γ} = Constant

(C) $TV^{\gamma-1}$ = Constant (D) $\frac{PV\gamma-1}{T\gamma}$ = Constant

29. The meson theory of nuclear forces was proposed by

(A) Fermi **(B) Yukawa** (C) Lyman (D) Rutherford

30. Kilowatt-hour is the unit of

(A) Time (B) Momentum **(C) Electric power** (D) Mass

31. Which mirror is used as a rear view mirror in a vehicle?

(A) Concave mirror **(B) Convex mirror**

(C) Plane mirror (D) Liquid mirror

32. A proton is _____ times heavier than an electron.

(A) 1000 (B) 183.6 (C) 931 **(D) 1836**

33. The capacitors having capacitance of 10 μF, 5 μF and 4 μF are connected in parallel. The effective capacitance is:

(A) 19 μF (B) 10 μF (C) 5 μF (D) 1 μF

34. The relationship between free energy change and e.m.f. of a cell is:

(A) ΔG = -nFE (B) ΔH = -nFE

(C) ΔE = -nFG (D) ΔF = nEG

35. Short circuit occurs when the resistance in the external circuit is

(A) Infinity (B) Maximum (C) Minimum **(D) Zero**

36. The distance travelled by light in an year is

(A) 1.578 x 10^{15} m. **(B) 9.467 x 10^{15} m.**

(C) 3.156 x 10^{15} m. (D) 9.467 x 10^{-15} m.

37. Which is a defect of the eye?

(A) Coma (B) Echo (C) Resonance (D) Osmosis

38. Match list-I with list-II correctly and select your answer using the codes given below:

List-I	List-II
(a) Recoil velocity	1. Galaxy
(b) Remote sensing	2. Gun
(c) Source of energy	3. Sun
(d) Milky way	4. Satellites

Codes:

	a	b	c	d
(A)	4	3	2	1
(B)	**2**	**4**	**3**	**1**
(C)	3	2	1	4
(D)	1	3	2	4

39. Lift was invented by

(A) E.G. Otis (B) J.J. Thomson (C) Issac Newton (D) Marie Curie

40. Choose the incorrect statement.

(A) No work is done if the displacement is perpendicular to the direction of the applied force

(B) Frictional force is non conservative

(C) All the central forces are non conservative

(D) If the angle between the force and displacement vectors is obtuse, the work done is negative

41. Electric potential is expressed in

(A) Joules / Coulomb (B) Watt / Coulomb

(C) Volt / Meter (D) Coulomb / Sec

42. Which of the following physical quantities have the same dimension?

1) Work 2) Power 3) Force 4) Moment of a couple

(A) (3) and (4) (B) (2) and (4)

(C) (1) and (4) (D) (2) and (3)

43. Match the following:

(a) Impulse	1. Amp-sec.
(b) Latent heat	2. Ohm-m.
(c) Charge	3. J/kg.
(d) Specific resistance	4. MLT^{-1}

Codes:

	a	b	c	d
(A)	3	1	2	4
(B)	2	1	4	3
(C)	4	3	2	1
(D)	**4**	**3**	**1**	**2**

44. The vector quantity among the following is:

(A) Pressure (B) Energy (C) Speed **(D) Impulse**

45. Match the following:

(a) Equation of continuity	1. Surface tension
(b) Bernoulli's theorem	2. Viscosity
(c) Capillarity	3. Conservation of energy
(d) Stroke's law	4. Conservation of mass

Codes:

	a	b	c	d
(A)	3	1	4	2
(B)	**4**	**3**	**1**	**2**
(C)	4	3	2	1
(D)	4	1	3	2

46. When a cube of ice floating in a beaker of water melts, the level of water in the beaker

(A) Increases (B) Decreases

(C) Remains the same (D) Increases initially but then falls down

47. If a particle could move with the velocity of light, the value of its kinetic energy would be

(A) Zero (B) 0.5 C (C) C **(D) ∞**

48. Size of a nucleus depends on

(A) Number of neutrons (B) Number of protons

(C) Number of nucleons (D) Number of nucleons and electrons

49. Match the following:

(a) Amp-m^2	1. Current density
(b) Newton/amp-meter	2. Magnetic density
(c) Coulomb/m^2	3. Electric displacement
(d) Amp/m^2	4. Magnetic displacement

Codes:

	a	b	c	d
(A)	1	2	3	4
(B)	**4**	**2**	**3**	**1**
(C)	4	3	2	1
(D)	2	3	1	4

50. A person is sitting in a travelling train and facing the engines. He tosses up a coin and the coin falls behind him. It can be concluded that the train is:

(A) Moving backward with uniform speed

(B) Moving forward with uniform speed

(C) Moving forward and suddenly losing speed

(D) Moving forward and suddenly gaining speed

51. Choose the correct answer from the following. The instrument used to measure the minute distance is:

(A) Meter scale (B) Inch tape

(C) Vernier Caliper **(D) Micrometer gauge**

52. Hydrogen filled balloon flies high in air because,

a) Weight of the balloon is much lesser than the weight of the air it displaces.

b) Weight of the balloon is greater than the weight of air it displaces.

c) The difference between the weights doesn't give the power to lift.

d) Density of air is 14 times greater than hydrogen.

(A) a is wrong (B) b is correct

(C) c is correct **(D) Both a and d is correct**

53. Assertion (A): Electric fish generates powerful electric shocks.

Reason (R): It lives in Orinoco river.

Now select your answer according to the coding scheme given below:

(A) Both (A) and (R) are true, and (R) is the correct explanation of (A)

(B) Both (A) and (R) are true, but (R) is not the correct explanation of (A)

(C) (A) is true, but (R) is false

(D) (A) is false, but (R) is true

54. The listener is at rest with respect to the sources of sound. A wind starts blowing along the line joining the source and the observer which of the following quantities do not change.

(A) Frequency and wave length (B) Velocity and time period

(C) Velocity and wave length **(D) Frequency and time period**

55. Assertion (A): Rice cooker takes longer time to cook at Mount Everest.

Reason (R): As altitude increases pressure increases.

Now select your answer according to the coding scheme given below:

(A)A is true R is false (B) A is false R is true

(C) A and R are true (D) A and R are true

56. Pick out the correct statement from the following Action and Reaction

(A) Act on two different objects (B) Have equal magnitude

(C) Have opposite direction **(D) Resultant is NOT zero**

57. Assertion (A): Egg beaters have long handles.

Reason (R): To produce large turning effect with small force.

Now select your answer according to the coding scheme given below:

(A) (A) is correct and (R) is also correct explanation of (A)

(B) (A) is correct and (R) is wrong explanation of (A)

(C) (A) is wrong and (R) is correct

(D) Both (A) and (R) are wrong

58. Match the following:

(a) Traffic control vehicles	1. Ohm's law
(b) Relation between current and potential difference	2. Joule's law
(c) Electric Iron Box	3. Rayleigh law
(d) Rainbow	4. Doppler's effect

Codes:

	a	b	c	d
(A)	**4**	**1**	**2**	**3**
(B)	2	3	1	4
(C)	3	4	2	1
(D)	4	2	1	3

59. Capillarity of a liquid is due to

(A) Its elastic property (B) Garvity

(C) Its surface tension (D) Its mass

60. Consider the following statements:

Assertion (A): One cannot hear any sound in space.

Reason (R): In the absence of medium, no sound waves can travel

Now select your answer according to the coding scheme given below:

(A) Both (A) and (R) are individually true but (R) is not a correct explanation of (A)

(B) Both (A) and (R) are individually true but (R) is the correct explanation of (A)

(C) (A) is true, but (R) is false

(D) (A) is false, but (R) is true

61. Which of these spectral line series lie in the near infrared region of spectrum?

(A) Lyman (B) Balmer **(C) Paschen** (D) Pfund

62. Match the following:

Technology	Scientific Principles
(a) Aeroplane	1. Newton's Law
(b) Air Balloon	2. Bernoulli's Principle

(c) Rocket 3. Law of thermo dynamics
(d) Steam Engine 4. Buoyant Force

Codes:

	a	b	c	d
(A)	1	3	2	4
(B)	3	1	4	2
(C)	4	2	3	1
(D)	**2**	**4**	**1**	**3**

63. Which of the following are correct?

i) Work = Force x Displacement ii) Power = Work / Time

iii) Force = Mass x Velocity iv) Acceleration = Velocity / Time

(A) I, II and III (B) II, III and IV

(C) I, III and IV **(D) I, II and IV**

64. Why the wings of an aeroplane are shaped with lower surface being flat and the upper surface being curved?

(A) To reduce vibration

(B) To make difference in pressure to lift the plane vertically

(C) To accommodate more passengers in the wing

(D) To strengthen the wheels fitted in wings

65. Match the following:

Famous Indian Scientist	**Their Contribution**
(a) C.V. Raman	1. Ultra Short Radio Waves
(b) J.C. Bose	2. Thermal Ionization
(c) M.N. Saha	3. Quantum Statistics
(d) S.N. Bose	4. Inelastic Scattering of Light

	a	b	c	d
(A)	1	2	3	4
(B)	2	3	4	1
(C)	3	4	1	2

(D) 4 1 2 3

66. When the velocity of a body is reduced to half its initial value, then the kinetic energy of the body is reduced by _____ its value.

(A) $\frac{1}{3}$ **(B)** $\frac{1}{4}$ (C) $\frac{1}{5}$ (D) $\frac{1}{2}$

67. Match List - I with List – II:

List-I	List-II
(a) Coulomb's law	1. Magnetic flux
(b) Gauss law	2. Magnetic force
(c) Lorentz's law	3. Electric flux
(d) Faraday's law	4. Electrostatic force

Codes:

	a	b	c	d
(A)	3	4	1	2
(B)	2	1	4	3
(C)	**4**	**3**	**2**	**1**
(D)	1	2	3	4

68. Electro Cardiogram (ECG) is a graphic display of the

(A) Time-invariant voltages produced by myocardium

(B) Time-invariant current produced by myocardium

(C) Time-variant voltages produced by myocardium

(D) Time-variant current produced by myocardium

69. Match the following:

(a) X-rays	1. Henri Becquerel
(b) Electron	2. J.J. Thomson
(c) Neutron	3. James Chadwick
(d) Natural radioactivity	4. Roentgen

Codes:

	a	b	c	d
(A)	4	1	2	3
(B)	3	2	4	1

(C) 4 2 3 1

(D) 2 4 3 1

70. The number of generalized co-ordinates required to describe the postion of a simple pendulum is

(A) 1 **(B) 2** (C) 3 (D) 4

71. If g is the acceleration due to gravity and R is the radius of the earth, then escape velocity is given by the relation

(A) $V_e = \sqrt{2g}$ (B) $V_e = 2\sqrt{g}$ **(C)** $\mathbf{V_e = \sqrt{2Rg}}$ (D) $V_e = 2\sqrt{Rg}$

72. The relation connecting Young's modulus (E) Bulk modulus (K) and rigidity moudlus (N) is

(A) $\frac{9}{E} = \frac{3}{N} + \frac{1}{K}$ (B) $\frac{9}{N} = \frac{3}{E} + \frac{1}{K}$ (C) $\frac{9}{N} = \frac{1}{E} + \frac{3}{K}$ (D) $\frac{9}{E} = \frac{1}{N} + \frac{3}{K}$

73. The S.I. unit of gravitational constant G is

(A) $N\ Kg^{-2}$ (B) $Nm\ Kg^{-1}$ (C) $Nm^2\ Kg^1$ **(D)** $\mathbf{Nm^2\ kg^{-2}}$

74. If the time taken by a cup of tea to cool from 85^0 C to 75^0 C is 1 minute, then the time taken by it to cool from 65^0 C to 55^0 C is

(A) 50 Seconds (B) Exactly 1 minute

(C) More then 1 minute (D) 30 Seconds

75. The rest mass of a photon is

(A) Zero (B) Infinity

(C) Dependent on its wavelength (D) Dependent on its velocity

76. Which of the following sets have different dimensions?

(A) Presure, Young's Modulus, Stress

(B) Emf, Potential difference, Electric potential

(C) Heat, Work done, Energy

(D) Dipole moment, Electric flux, Electric Field

77. Air pressure is measured with the help of

(A) Thermometer (B) Nanometer

(C) Mercurial Barometer (D) Wind meter

78. The force F acting on a body of mass m is =

(A) Mass / acceleration (B) $(mass)^2$ x acceleration

(C) Mass x acceleration (D) Acceleration / mass

79. The compound used in photographic film is

(A) Agf – Silver fluoride (B) AgCl = Silver Chloride

(C) AgBr – Silver bromide (D) Agl = Silver lodide

80. Which of the following does not belong to the solar family?

(A) Asteriods (B) Comets (C) Planets **(D) Nebulae**

81. Which one of the following is not a particle in the nucleus?

(A) Neutron (B) Meson (C) Proton **(D) Photon**

82. Select the pair, which are dimensionally alike among the following

I) Product of force and time

II) Product of momentum and time

III) Product of Ariel velocity and linear density

IV) Product of work and time

(A) I and II only (B) II and III only

(C) III and IV only **(D) I and III only**

83. Arrange the following in the increasing order of their penetration powers

I. Alpha rays II. Beta particles III. Gamma rays

(A) I – II – III (B) II – I – III (C) II – III – I (D) III – II – I

84. Match list 1 and list 22 and answer through the codes given below:

List 1	List 2
(a) Infrared spectrometer	1. Measures the purity of sugar
(b) Polarimeter	2. Test aeroplane surfaces under stress
(c) Barometer	3. Study of molecular structure
(d) Strain gauge	4. Measure atmospheric pressure

	a	b	c	d
(A)	2	4	1	3
(B)	2	3	4	1
(C)	**3**	**1**	**4**	**2**
(D)	4	3	1	2

85. Identify particle physicist through the clues given below:

1. He won the Nobel Prize in physics for the year 2013 along with Francois Englert

2. He won the Royal Society's Copley medal on 20, July 2015

(A) Franck Wikzek **(B) Peter.W.Higgs**

(C) Stephen Hawkings (D) Joseph Taylor

86. To hear a distant echo, the surface reflecting the sound should atleast be at a distance (Take velocity of sound in air = 340 m/s)

(A) 34 m **(B) 17 m** (C) 51 m (D) 10 m

87. Identify the process(es) from the following which involves absorption of heat:

I) Condensation II) Sublimation III) Evaporation

(A) I and II only (B) I and III only **(C) II and III only** (D) I only

88. 1 KM(A), 1Light year (B) and 1 Astronomical unit (C) are related as

(A) A = B = C (B) A < B < C **(C) A < B > C** (D) A > B > C

89. Mass of an object is 10 kilogram. Its weight on the earth and is space respectively are

(A) 5 N, 10 N (B) 10 N, 10 N (C) 10 N, zero N **(D) 98 N, zero N**

90. What is the non conservative force in the following forces?

(A) Frictional force (B) Spring force

(C) Gravitational force (D) Force due to Earth's gravity

91. Certain metals and compounds carry high electric current and have zero resistance at very low temperatures. The materials possessing this property are known as

(A) Resistors (B) Capacitors

(C) Dielectrics **(D) Super conductors**

92. The property of rotating the plane of vibration of polarized light by certain crystals is called

(A) Polarisation (B) Diffraction **(C) Optical activity** (D) Interference

93. Match list-I with list-II correctly and select your answer using the codes given below:

List-I	**List-II**
(a) Temperature	1. Kilogram
(b) Luminous intensity	2. Ampere
(c) Electric current	3. Candela
(d) Mass	4. Kelvin

Codes:

	a	b	c	d
(A)	3	4	1	2
(B)	1	2	4	3
(C)	**4**	**3**	**2**	**1**
(D)	2	1	4	3

94. Faraday's law of electrolysis are related to

(A) Atomic number of the cation (B) Atomic number of the anion

(C) Equivalent weight of the electrolyte (D) Speed of the cation

95. Identify the Incorrect pair

I) Length - Scalar II) Velocity - Vector

III) Weight - Scalar IV) Momentum - Vector

(A) I (B) II **(C) III** (D) IV

96. The principle of gravitational lenses is

(A) Reflection of light (B) Refraction of light

(C) Polarisation of light **(D) Bending of light around masses**

97. Liquid helium can reduce the temperature of the coil in MRF Equipment to around

(A) 40 K **(B) 4 K** (C) 273 K (D) $0^{o}C$

98. Which of the following statements is/are correct?

1) A fuse wire is made of 37% lead and 63% tin

2) A fuse wire is made of 63% lead and 37% tin

3) A fuse wire has high resistance and high melting point

4) A fuse wire has low resistance and high melting point

(A) 1, 4 are correct statements (B) 2, 3 are correct statements

(C) 1, 3 are correct statements (D) 2, 4 are correct statements

99. Rain drop starts to fall down when the velocity of the drop is

(A) Equal to terminal velocity **(B) Greater than terminal velocity**

(C) Lesser than terminal velocity (D) Greater than critical velocity

100. Consider the following statements:

Assertion (A): Anemometer is a device used for measuring rainfall.

Reason (R): It has aluminum cups which turn on a spindle.

Now select your answer according to the coding scheme given below:

(A) Both (A) and (R) are true, and (R) is the correct explanation of (A)

(B) Both (A) and (R) are true, but (R) is not the correct explanation of (A)

(C) (A) is true, but (R) is false

(D) (A) is false, but (R) is true