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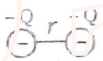
XII - STD	2019 - 2020	Marks : 50	1.00 : Hr.
ONE MARK	PHYSICS		
TEST NO : 1	1. Electrostatics 2. Current Electricity 3. Magnetism and Magnetic effects of electric current		

I. Choose the correct answer : 50 x 1 = 50

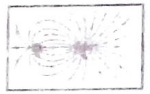
1. An electric dipole is placed at an alignment angle of 30° with an electric field of 2×10^5 NC^{-1}. It experiences a torque equal to 8 N m. The charge on the dipole if the dipole length is 1 cm .....
(a) 4 mC (b) 8 mC (c) 5 mC (d) 7 mC

2. Two metallic spheres of radii 1 cm and 3 cm are given charges of -1×10^{-2} C and 5×10^{-2} C respectively. If these are connected by a conducting wire, the final charge on the bigger sphere is .....
(a) 3×10^{-2} C (b) 4×10^{-2} C (c) 1×10^{-2} C (d) 2×10^{-2} C

3. Which charge configuration produces a uniform electric field ? .....
(a) Point Charge (b) Infinite uniform line charge
(c) Uniformly charged infinite plane (d) Uniformly charged spherical shell

4. Rank the electrostatic potential energies for the given system of charges in increasing order .....
(a)  (b)  (c)  (d) 
(a) 1 = 4 < 2 < 3 (b) 2 = 4 < 3 < 1 (c) 2 = 3 < 1 < 4 (d) 3 < 1 < 2 < 4

5. Two points A and B are maintained at a potential of 7 V and −4 V respectively. The work done in moving 50 electrons from A to B is .....
(a) 8.80×10^{-17} J (b) -8.80×10^{-17} J (c) 4.40×10^{-17} J (d) 5.80×10^{-17} J

6. What is the ratio of the charges $\left|\frac{q_1}{q_2}\right|$ for the following electric field line pattern ? ..... 
(a) $\frac{1}{5}$ (b) $\frac{25}{11}$ (c) 5 (d) $\frac{11}{25}$

7. The force experienced by a unit charge is called .....
(a) Electric potential (b) Electric flux (c) Electric field (d) Static electricity

8. Charge per unit volume is called ..... (a) Linear charge density (λ)
(b) Surface charge density (σ) (c) Volume charge density (ρ) (d) Electric flux

9. In tuning radio we use, ...
(a) Capacitors (b) Transistors (c) Diodes (d) LEDS

10. Value of 'k' in Coulomb's law depends upon .....
(a) Magnitude of charges (b) Distance between charges
(c) Both (a) and (b) (d) Medium between two charges

11. Electric field intensity at a point due to an infinite sheet of charge having surface charge density σ is E. If the sheet were conducting, electric intensity would be ..... (a) $\frac{E}{2}$ (b) E (c) 2E (d) 4E

12. Match the following :

1.	Amber	(a)	Negatively charged
2.	Rubber	(b)	$\varepsilon_r = 1$
3.	Glass rod	(c)	a kind of resin
4.	Air	(d)	Positively charged

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

13. Capacitors use the principle of .....
(a) Self induction (b) Mutual induction
(c) Electrostatic induction (d) Dielectric polarisation

14. Find the odd one out .....
(a) Electric dipole moment (b) Electric field intensity
(c) Electric potential difference (d) Electrostatic shielding

15. The intensity of electric field at a point is .....
(a) The force experienced by a charge q
(b) The work done in bringing unit positive charge from infinity to that point
(c) The positive gradient of the potential
(d) The negative gradient of the potential

16. Gauss law is another form of .....
(a) Newton's law (b) Kepler's law (c) Ohm's law (d) Coulomb's law

17. Which of the following statement on equipotential surface is wrong?.....
(a) The potential difference between any two points on the surface, is zero.
(b) The electric field is always perpendicular to the surface.
(c) Equipotential surface is always spherical.
(d) No work is done in moving a charge along the surface.

18. In a large building, there are 15 bulbs of 40 W, 5 bulbs of 100W, 5 fans of 80 W and 1 heater of 1kW are connected. The voltage of electric mains is 220 V. The minimum capacity of the main fuse of the building will be ..... (a) 14 A (b) 8 A (c) 10 A (d) 12 A

19. A toaster operating at 240 V has a resistance of 120 Ω. The power is ..... (a) 400 W (b) 2 W (c) 480 W (d) 240

20. There is a current of 1.0 A in the circuit shown below. What is the resistance of 'P' ? ..... 
(a) 1.5 Ω (b) 2.5 Ω (c) 3.5 Ω (d) 4.5 Ω

21. A metallic block has no potential difference applied across it, then the mean velocity of free electrons is ..... (a) Proportional to T
(b) Proportional to $\sqrt{T}$ (c) Finite but independent of temperature (d) Zero

[P.T.O.]

22. Four resistances are connected to a 5V battery of negligible internal resistance as shown what is the potential across 2 Ω ?
(a) 0.5 V (b) 1.5 V (c) 1.0 V (d) 2.0 V

23. Kirchoff's I law i.e, $\Sigma i = 0$, at a junction, deals with the conservation of ..... (a) Charge (b) Energy (c) Momentum (d) Angular momentum

24. Conductor which obey ohm's law are called .....
(a) Dielectrics (b) Superconductors (c) Ohmic conductors (d) Semiconductors

25. Nichrome wire is used as the heating element because it has .....
(a) Low specific resistance (b) Low melting point
(c) High specific resistance (d) High conductivity

26. Fuse wire is an alloy of .....
(a) 37 % lead and 63 % tin (b) 63 % lead and 37 % tin
(c) 37 % copper and 63 % tin (d) 63 % copper and 37 % tin

27. The curve representing Ohm's law is a .....
(a) Linear (b) Parabola (c) Hyperbola (d) None of the above

28. There are behaving like thermistor .....
(a) Insulators and conductors (b) Semiconductors and conductors
(c) Conductors and alloys (d) Insulators and semiconductors

29. Thermo electric generators are used in power plants to convert ..... into electricity.
(a) Light energy (b) Waste heat (c) Sound energy (d) Hydro energy

30. The reciprocal of conductivity is .....
(a) Specific conductance (b) Specific resistance
(c) Resistance (d) Conductance

31. Choose the Odd one out .....
(a) Copper (b) Iron (c) Manganin (d) Aluminium

32. Kirchhoff's I law is a consequence of .....
(a) Law of conservation of energy (b) Law of conservation of charges
(c) Law of conservation of currents (d) Law of conservation of voltages

33. Ohm's law is applicable only for .....
(a) Complicated circuits (b) Primary circuits
(c) Simple circuits (d) Secondary circuits

34. The phenomenon of superconductivity was first observed by .....
(a) George Simon Ohm (b) Volta (c) Faraday Onnes (d) Kammerlingh Onnes

35. A bar magnet of length l and magnetic moment M is bent in the form of an arc as shown in figure. The new magnetic dipole moment will be .....

(a) M (b) $\frac{3}{\pi}$ M (c) $\frac{2}{\pi}$ M (d) $\frac{1}{2}$ M

36. A circular coil of radius 5 cm and has 50 turns carries a current of 3 ampere. The magnetic dipole moment of the coil is .....
(a) 1.0 amp – m^2 (b) 1.2 amp – m^2 (c) 0.5 amp – m^2 (d) 0.8 amp – m^2

37. A non-conducting charged ring of charge q, mass 'm' and radius 'r' is rotated with constant angular speed ω. Find the ratio of its magnetic moment with angular momentum is ..... (a) $\frac{q}{m}$ (b) $\frac{2q}{m}$ (c) $\frac{q}{2m}$ (d) $\frac{q}{4m}$

38. Three wires of equal lengths are bent in the form of loops. One of the loops is circle, another is a semi-circle and the third one is a square. They are placed in a uniform magnetic field and same electric current is passed through them. Which of the following loop configuration will experience greater torque ? .....
(a) Circle (b) Semi-circle (c) Square (d) All of them

39. The magnetic field at the centre O of the following current loop is ....
(a) $\frac{\mu_0 I}{4r}\otimes$ (b) $\frac{\mu_0 I}{4r}\odot$ (c) $\frac{\mu_0 I}{2r}\otimes$ (d) $\frac{\mu_0 I}{2r}\odot$

40. Angle of dip at a place, where horizontal and vertical component of earth's field are equal is ..... (a) 45° (b) 60° (c) 30° (d) 0°

41. A current carrying conductor is associated with .....
(a) Electric field (b) Magnetic field (c) Electro magnetic (d) All these

42. Cyclotron is used to ..... (a) Accelerate charged particles or ions to low voltages
(b) Decelerate charged particles or ions to high voltages
(c) Accelerate charged particles or ions to high energies
(d) Accelerate charged particles or ions to high voltages

43. Fuse wire ..... (a) is an alloy of lead and copper (b) has low resistance
(c) has high resistance (d) has high melting point

44. Two parallel wires carrying same current in the opposite direction will experience .....
(a) an attractive (b) magnetic force (c) electric force (d) repulsive force

45. The direction of force on a current carrying conductor placed in a magnetic field is given by ..... (a) Fleming's Left Hand Rule
(b) Fleming's Right Hand Rule (c) Ampere's velocity (d) Biot-Savart Law

46. The force between two parallel wires carryting current is .....
(a) $F = \frac{\mu_0}{2\pi}\frac{I_1 I_2 l}{a}$ (b) $F = \frac{\mu_0}{2\pi}\frac{I_1 I_2 l}{al}$ (c) $F = \frac{\mu_0}{2\pi}\frac{I_1 I_2}{al}$ (d) $\frac{\mu_0}{2\pi} I_1 I_2 \frac{l}{a}$

47. Choose the correct to Incorrect statements .....
(I) The ability of the materials to retain the magnetism in them even magnetising field vanishes is called remanence or retentivity
(II) Hysteristis means 'lagging beyond' which one is incorrect statement ?
(a) I only (b) II only (c) both are correct (d) None of these

48. The unit of Galvanometer constant is ..... (a) Am² (b) A rad (c) nC² (d) As²

49. These are behaving like thermistor .....
(a) insulators and conductors (b) semiconductors and conductors
(c) insulators and semiconductors (d) conductors and alloys

50. The word 'Magnetism' was derived from Iron are .....
(a) Fe_3O_2 (b) Fe_2O_3 (c) Fe_3O_4 (d) Fe_2O_3

XII - STD	2019 - 2020	Marks : 50	1.00 : Hr.
ONE MARK	PHYSICS		
TEST NO : 2	4. Electromagnetic Induction and Alternating Current 5. Electromagnetic waves		

50 x 1 = 50

I. Choose the correct answer :

1. A thin semi-circular conducting ring (PQR) of radius ' r ' is falling with its plane vertical in a horizontal magnetic field B, as shown in the figure.

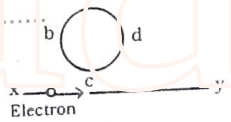
The potential difference developed across the ring when its speed v, is ..... (a) Zero (b) $\frac{Bv\pi r^2}{2}$ and P is at higher potential

(c) πrBv and R is at higher potential (d) $2rBv$ and R is at higher potential

2. The instantaneous values of alternating current and voltage in a circuit are $i = \frac{1}{\sqrt{2}} \sin(100\pi t)$ A and $v = \frac{1}{\sqrt{2}} \sin\left(100\pi + \frac{\pi}{3}\right)$ V. The average power in watts consumed in the circuit is .....

(a) $\frac{1}{4}$ (b) $\frac{\sqrt{3}}{4}$ (c) $\frac{1}{2}$ (d) $\frac{1}{8}$

3. An electron moves on a straight line path XY as shown in the figure. The coil *abcd* is adjacent to the path of the electron. What will be the direction of current, if any, induced in the coil ? .....



(a) The current will reverse its direction as the electron goes past the coil

(b) No current will be induced (c) abcd (d) adcb

4. A circular coil with a cross-sectional area of 4 cm^2 has 10 turns. It is placed at the centre of a long solenoid that has 15 turns/cm and a cross-sectional area of 10 cm^2. The axis of the coil coincides with the axis of the solenoid. What is their mutual inductance ? .....

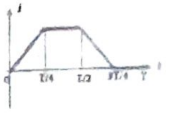
(a) 7.54 μH (b) 8.54 μH (c) 9.54 μH (d) 10.54 μH

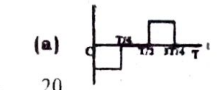
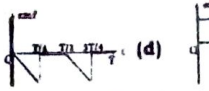
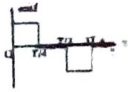
5. In an electrical circuit, R, L, C and AC voltage source are all connected in series. When L is removed from the circuit, the phase difference between the voltage and current in the circuit is $\frac{\pi}{3}$. Instead, if C is removed from the circuit, the phase difference is again $\frac{\pi}{3}$. The power factor of the circuit is .....

(a) $\frac{1}{2}$ (b) $\frac{1}{\sqrt{2}}$ (c) 1 (d) $\frac{\sqrt{3}}{2}$

6. In a transformer, the number of turns in the primary and the secondary are 410 and 1230 respectively. If the current in primary is 6A, then that in the secondary coil is .... (a) 2 A (b) 18 A (c) 12 A (d) 1

7. The current ' i ' flowing in a coil varies with time as shown in the figure. The variation of induced emf with time would be .....



(a)  (b)  (c)  (d) 

8. $\frac{20}{\pi^2}$ H inductor is connected to a capacitor of capacitance C. The value of C in order to impart maximum, power at 50 Hz is .....

(a) 50μF (b) 0.5 μF (c) 500 μF (d) 5 μF

9. The flux linked with a coil at any instant 't' is given by $\Phi_B = 10t^2 - 50t + 250$. The induced emf at t = 3s is .....

(a) - 190 V (b) - 10 V (c) 10 V (d) 190 V

10. In a series resonant RLC circuit, the voltage across 100 Ω resistor is 40 V. The resonant frequency ω is 250 rad/s. If the value of C is 4 μF, then the voltage across L is .... (a) 600 V (b) 4000 V (c) 400 V (d) 1V

11. In the following figure the key is closed. Which statement is correct?

(a) Momentary current flows in Y circuit from B to A.

(b) Momentary current flows in Y circuit from A to B.

(c) No current flows along AB (d) The coil Y is attracted to X.

12. Len's law is in accordance with the law of .....

(a) Conservation of charges (b) Conservation of flux

(c) Conservation of momentum (d) Conservation of energy

13. Transformer works on .....

(a) AC only (b) DC only (c) both AC and DC (d) AC more effectively than DC

14. The self-inductance of a straight conductor is .....

(a) Zero (b) Infinity (c) Very large (d) Very small

15. In Fleming's right hand rule, the forefinger represents the direction of .....

(a) Motion of the conductor (b) Magnetic field (c) Induced current (d) Induced emf

16. A phenomenon in which a varying current in one coil induces an emf in the neighbouring coil is ..... (a) Mutual induction (b) Self induction

(c) Electrostatic induction (d) Electromagnetic induction

17. The generator rule is ... (a) Fleming's left hand rule (b) Fleming's right hand rule

(c) Maxwell's right hand cork screw rule (d) Right hand palm rule

18. Eddy current loss is also known as ..... loss.

(a) Copper (b) Heat (c) Hysteresis (d) Iron

19. Choose the odd one out ..... (a) Inductive reactance (b) Self Inductance

(c) Capacitive reactance (d) Resistance

20. Inductive reactance, X_L = ? ..... (a) $2\pi nL$ (b) $\frac{2\pi}{L}$ (c) $\frac{2\pi}{nL}$ (d) $\frac{nL}{2\pi}$

21. The quantity that changes with time in an A.C. current is .....

(a) Magnitude (b) Direction (c) Both magnitude and direction (d) None

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22. The unit of impedance is .....
(a) mho-metre^{-1} (b) Ohm (c) ohm-metre (d) mho-metre

23. Choose the correct - Incorrect statement .
(I) : An AC generator converts electrical energy into mechanical energy
(II) : A Transformer converts high voltage (low current) into low voltage (high current) and vice versa.
Which one is incorrect statement ?
(a) I only (b) II only (c) both are correct (d) None

24. In RLC series AC circuit at resonance : .....
(a) Resistance is zero (b) Net reactance is zero (c) Impedance is maximum
(d) Voltage leads the current by a phase angle $\frac{\pi}{2}$

25. An alternating current has ..... (a) Only positive value
(b) Only negative value (c) Both positive and negative value (d) Steady value

26. Which of the following electromagnetic radiation is used for viewing objects through fog .... (a) Microwave (b) Gamma rays (c) X-rays (d) Infrared

27. Consider an oscillator which has a charged particle and oscillates about its mean position with a frequency of 300 MHz. The wavelength of electromagnetic waves produced by this oscillator is ..... (a) 1 m (b) 10 m (c) 100 m (d) 1000 m

28. Which of the following is an electromagnetic wave ? .....
(a) α - rays (b) β - rays (c) γ - rays (d) all of them

29. Which of the following is not true for electromagnetic waves ? .....
(a) It transport energy (b) It transport momentum
(c) It transport angular momentum
(d) In vacuum, it travels with different speeds which depend on their frequency

30. The dimension of $\frac{1}{\mu_0 \varepsilon_0}$ is ..... (a) [LT^{-1}] (b) [L^2T^{-2}] (c) [$L^{-1}T$] (d) [$L^{-2}T^{2}$]

31. In an electromagnetic wave in free space the rms value of the electric field is 3 Vm^{-1}. The peak value of the magnetic field is .....
(a) 1.414×10^{-8} T (b) 1.0×10^{-8} T (c) 2.828×10^{-8} T (d) 2.0×10^{-8} T

32. Which of the following are false for electromagnetic waves .....
(a) Transverse (b) Mechanical waves
(c) Longitudinal (d) Produced by accelerating charges

33. If the amplitude of the magnetic field is 3×10^{-6} T, then amplitude of the electric field for a electromagnetic waves is .....
(a) 100 V m^{-1} (b) 300 V m^{-1} (c) 600 V m^{-1} (d) 900 V m^{-1}

34. Which of the following electromagnetic waves has the highest frequency ? ..... (a) Radio waves (b) Micro waves (c) X-rays (d) γ - rays

35. The phase difference between electric and magnetic field vectors in the electromagnetic waves ? ..... (a) $\frac{\pi}{4}$ (b) $\frac{\pi}{2}$ (c) π (d) zero

36. Cellular phones use radio frequencies in .....
(a) AM band (b) UHF band (c) FM band (d) upto 54 MHz

37. Electromagnetic waves are discovered by .....
(a) Hertz (b) Maxwell (c) Lenz (d) Huygens

38. The energy of electromagnetic waves is due to which energy of the oscillating charge ? .....
(a) Mechanical (b) Potential (c) Kinetic (d) Electrostatic

39. Electromagnetic waves are ..... (a) Longitudinal waves (b) Mechanical waves
(c) Transverse waves (d) Straight waves

40. Vacuum tubes produces .....
(a) Visible light (b) RF waves (c) UV rays (d) Microwaves

41. The dark lines in the solar spectrum are called ..... lines.
(a) Fresnel (b) Newton (c) Compton (d) Fraunhofer

42. A pure green glass plate when, placed in the path of white light, absorbs .... (a) Everything (b) Everything except green (c) Nothing (d) Only red

43. ..... emission spectrum is used to identify the gas used.
(a) Continuous (b) Line (c) Band (d) Solid

44. Gamma rays are used in the treatment of .....
(a) Cancer (b) AIDS (c) Polio (d) TB

45. Microwaves are used in ..... communication system.
(a) Radio (b) TV (c) Radar (d) Sonar

46. Radio frequency waves are produced by .....
(a) Radioactive nuclei (b) Radioactive nuclear reactions
(c) Accelerated charges (d) Radio-carbon

47. Absorption spectrum is the characteristic of the .....
(a) Emitting substance (b) Absorbing substance
(c) Reflecting substance (d) Penetrating substance

48. Electric filament lamp gives rise to .....
(a) Line spectrum (b) Continuous spectrum
(c) Continuous absorption spectrum (d) Line absorption spectrum

49. The correct definition of spectrum is ..... (a) Band of colours
(b) Band of white light (c) Band of frequencies (d) Band of amplitudes

50. Calcium of Barium salts in bunsen flame, CO_2, N_2 molecule, NH_3 gas in a discharge tube gives ..... (a) Line emission spectra
(b) Continuous emission spectra (c) Line absorption spectra (d) Band spectra

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ONE MARK	**PHYSICS**		
TEST NO : 3	6. Optics 7. Dual Nature of Radiation and Matter		

I. Choose the correct answer : **50 x 1 = 50**

1. An object is placed in front of a convex mirror of focal length of 'f' and the maximum and minimum distance of an object from the mirror such that the image formed is real and magnified .....
(a) $2f$ and c (b) c and ∞ (c) f and O (d) None of these

2. Stars twinkle due to .....
(a) Reflection (b) Total internal reflection (c) Refraction (d) Polarisation

3. A rod of length 10 cm lies along the principal axis of a concave mirror of focal length 10 cm in such a way that its end closer to the pole is 20 cm away from the mirror. The length of the image is .....
(a) 2.5 cm (b) 5 cm (c) 10 cm (d) 15 cm

4. Two coherent monochromatic light beams of intensities I and 4I are superposed. The maximum and minimum possible intensities in the resulting beam are ..... **(a) 5I and I (b) 5I and 3I (c) 9I and I (d) 9I and 3I**

5. A plane glass is placed over a various coloured letters (violet, green, yellow, red) The letter which appears to be raised more is, ...
(a) Red (b) Yellow (c) Green (d) Violet

6. A ray of light strikes a glass plate at an angle 60°. If the reflected and refracted rays are perpendicular to each other, the refractive index of the glass is, ... **(a)** $\sqrt{3}$ **(b)** $\frac{3}{2}$ **(c)** $\sqrt{\frac{3}{2}}$ **(d) 2**

7. The radius of curvature of curved surface at a thin planoconvex lens is 10 cm and the refractive index is 1.5. If the plane surface is silvered, then the focal length will be, ... **(a) 5 cm (b) 10 cm (c) 15 cm (d) 20 cm**

8. The speed of light in an isotropic medium depends on, ...
(a) Its intensity (b) Its wavelength (c) The nature of propagation
(d) The motion of the source w.r. to medium

9. When a biconvex lens of glass having refractive index 1.47 is dipped in a liquid, it acts as a plane sheet of glass. This implies that the liquid must have refractive index, ... **(a) Less than one (b) Less than that of glass**
(c) Greater than that of glass (d) Equal to that of glass

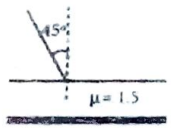
10. The transverse nature of light is shown in, ...
(a) Interference (b) Diffraction (c) Scattering (d) Polarisation

11. A ray of light is incidenting normally on a plane mirror. The angle of reflection will be ..... **(a) 0° (b) 90° (c) Will not be reflected (d) None of these**

12. A man of length 'h' requires a mirror of length at least equal to, to see his own complete image ..... **(a)** $\frac{h}{4}$ **(b)** $-\frac{h}{2}$ **(c)** $\frac{h}{2}$ **(d)** h

13. It is desired to photograph the image of an object placed at a distance of 3 m from the plane mirror. The camera which is at a distance of 4.5 m from the mirror should be focused for a distance of .....
(a) 3 m (b) 4.5 m (c) 6 m (d) 7.5 m

14. One side of a glass slab is silvered as shown. A ray of light is incident one the other side at angle of incidence $i = 45^0$. Refractive index of glass is given as 1.5. The deviation of the ray of light from its initial path when it comes out of slab is .....



(a) 90° (b) 180° (c) 120° (d) 45°

15. A diminished virtual image can be formed only in .....
(a) Plane mirror parabolic mirror (b) A concave mirror
(c) A convex mirror (d) Concave

16. A point object is placed at a distance of 10 cm and its real image is formed at a distance of 20 cm from a concave mirror. If the object is moved by 0.1 cm towards the mirror, the images will shift by about ..... **(a) 0.4 cm away from the mirror (b) 0.4 cm towards the mirror**
(c) 0.8 cm from the mirror (d) 0.8 cm towards the mirror

17. A convex mirror has a focal length f. A real object is placed at a distance f infront the pole produces an image at .....
(a) Infinity (b) f **(c)** $\frac{f}{2}$ **(d)** $2f$

18. A convex mirror is used to form the image of an object. Then which of the following statement is wrong .....
(a) The images lies between the pole and the focus
(b) The image is diminished in size (c) The image is erect (d) The image is real

19. A dice is placed with its one edge parallel to the principal axis between the principal focus and the centre to the curvature of a concave mirror. Then the image has the shape of .....
(a) Cube (b) Cuboid (c) Barrel shaped (d) Spherical

20. Choose the correct statements :
(I) Wavefront division used to produce two coherent sources.
(II) Destructive interference occurs at the centre of the shadow.
(III) Newton used a prism to produce dispersion.
(IV) Atmospheric particles changes the direction of the sunlight.
(a) I and II only (b) I, II and IV only (c) I, II and III only (d) I, III and IV only

21. A concave mirror is used to focus the image of a flower on a nearby well 120 cm from the flower. If a lateral magnification of 16 is desired, the distance of the flower from the mirror should be .....
(a) 8 cm (b) 12 cm (c) 80 cm (d) 120 cm

22. A boy stands straight infront of a mirror at a distance of 30 cm away from it. He sees his erect image whose height is $\frac{1}{5}^{th}$ of his real height. The mirror he is using is ..... **(a) Plane mirror (b) Convex mirror**
(c) Concave lens (d) Plano-convex mirror

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23. An object is placed at 20 cm from a convex mirror of focal length 10 cm. The image formed by the mirror is .....
(a) Real and 20 cm from the mirror (b) Virtual and at 20 cm from the mirror
(c) Virtual and 20/3 cm from the mirror (d) Real and 20/3 from the mirror

24. When a plane mirror is rotated through an angle θ, then the reflected ray turns through the angle 2θ, then the size of the image .....
(a) Is doubled infinite (b) Is halved (c) Remains the same (d) Becomes infinite

25. A light bulb is placed between two mirrors (plane) inclined at an angle of 60^0. Number of images formed are .....
(a) 2 (b) 4 (c) 5 (d) 6

26. When a metallic surface is illuminated with radiation of wavelength λ, the stopping potential is V. If the same surface is illuminated with radiation of wavelength 2λ, the stopping potential $\frac{1}{4}$. The threshold wavelength for the metallic surface is ..... (a) 4 λ (b) 5 λ (c) $\frac{5}{2}$ λ (d) 3 λ

27. The wavelength λ_e of an electron and λ_p of a photon of same energy E are related by ..... (a) $\lambda_p \propto \lambda_e$ (b) $\lambda_p \propto \sqrt{\lambda_e}$ (c) $\lambda_p \propto \frac{1}{\sqrt{\lambda_e}}$ (d) $\lambda_p \propto \lambda_e^2$

28. A photoelectric surface is illuminated successively by monochromatic light of wavelength λ and $\frac{\lambda}{2}$. If the maximum kinetic energy of the emitted photoelectrons in the second case is 3 times that in the first case, the work function at the surface of material is ..... (a) $\frac{hc}{\lambda}$ (b) $\frac{2hc}{\lambda}$ (c) $\frac{hc}{3\lambda}$ (d) $\frac{hc}{2\lambda}$

29. Photons of wavelength λ are incident on a metal. The most energetic electrons ejected from the metal are bent into a circular arc of radius R by a perpendicular magnetic field having magnitude B. The work function of the metal is .....
(a) $\frac{hc}{\lambda} - m_e + \frac{e^2B^2R^2}{2m_e}$ (b) $\frac{hc}{\lambda} + 2m_e\left[\frac{eBR}{2m_e}\right]^2$ (c) $\frac{hc}{\lambda} - m_e c^2 - \frac{e^2B^2R^2}{2m_e}$ (d) $\frac{hc}{\lambda} - 2m_e\left[\frac{eBR}{2m_e}\right]^2$

30. Emission of electrons by the absorption of heat energy is called ..... emission. (a) Photoelectric (b) Field (c) Thermionic (d) Secondary

31. In an electron microscope, the electrons are accelerated by a voltage of 14 kV. If the voltage is changed to 224 kV, then the de Broglie wavelength associated with the electrons would .....
(a) Increase by 2 times (b) Decrease by 2 times
(c) Decrease by 4 times (d) Increase by 4 times

32. A light of wavelength 500 nm is incident on a sensitive plate of photoelectric work function 1.235 eV. The kinetic energy of the photo electrons emitted is be (Take $h = 6.6 \times 10^{-34}$ Js) .....
(a) 0.58 eV (b) 2.48 eV (c) 1.24 eV (d) 1.16 eV

33. If the frequency of light in a photoelectron experiment is doubled the stopping potential will ..... (a) be doubled (b) be halved
(c) become more than double (d) become less than double

34. The following particles are moving with the same velocity, then maximum de-Broglie wavelength will be for .....
(a) Proton (b) α - particle (c) Neutron (d) β - particle

35. Photon has ..... (a) Energy but zero mass (b) Mass but zero energy
(c) Zero mass and zero energy (d) Infintie mass and energy

36. Photo-electric effect was first discovered by .....
(a) Einstein (b) Newton (c) Hertz (d) Germer

37. Energy of each photon is ..... (a) $\frac{3}{2}h\nu$ (b) $3h\nu$ (c) $2h\nu$ (d) $h\nu$

38. The anode of a simple photo emissive cell is .....
(a) Glass tube (b) Quartz crystal (c) Platinum wire (d) Iron rod

39. An electron microscope is used for ..... (a) Observing stars
(b) Magnifying small objects (c) Heating purposes (d) Pressure measurement

40. ..... are used to study virus and bacteria.
(a) Lenses (b) Mirrors (c) Electron microscopes (d) Telescopes

41. Length contraction is known as ..... (a) Gerner resolution
(b) Thomson contraction (c) Compton effect (d) Lorentz-Fitzerald contraction

42. The discrete packets of light energy are called as .....
(a) Proton (b) Fosiron (c) Quanta (d) Electron

43. The wavelength of de-Broglie waves doesn't depend on .....
(a) Mass (b) Velocity (c) Momentum (d) Change

44. The number of de Broglie waves of an electron in the nth orbit of an atom is ..... (a) n (b) $n - 1$ (c) $n + 1$ (d) $2n$

45. The unit of the number of electric lines of force passing through a given area is ..... (a) No unit (b) NC^{-1} (c) Nm^2C^{-1} (d) Nm

46. Bodies in inertial frames obey .....
(a) Newtonian mechanics (b) Laws of electro magnetism
(c) Einstein's relativity (d) Nuclear laws

47. In classical mechanics, mass of a moving body is .....
(a) Constant (b) Not absolute (c) Dependent on velocity (d) Interdependent

48. Electron microscope could not be used in the study of .....
(a) Surface of metals (b) Living organisms
(c) Structure of textile fibres (d) Crystal structure

49. ..... are those orbits which contain the complete waves of electron.
(a) Stable orbits (b) Stationary orbits (c) Helical orbits (d) Half-integral orbits

50. The minimum potential given to the anode for which the photoelectric current becomes zero is called ..... potential.
(a) Cut-off (b) Threshold (c) Saturation (d) Active

XII - STD	2019 - 2020	Marks : 50	1.00 : Hr.
ONE MARK	PHYSICS		
TEST NO : 4	8. Atomic and Nuclear Physics 9. Semiconductor Electronics		

50 x 1 = 50

I. Choose the correct answer :

1. The charge of cathode rays is .....
   (a) Positive (b) Negative (c) Neutral (d) Not defined
2. Atomic number of H-like atom with ionization potential 122.4 V for $n = 1$ is ..... (a) 1 (b) 2 (c) 3 (d) 4
3. In a hydrogen atom, the electron revolving in the fourth orbit, has angular momentum equal to ..... (a) h (b) $\frac{h}{\pi}$ (c) $\frac{4h}{\pi}$ (d) $\frac{2h}{\pi}$
4. The ratio of the wavelength for the transition from $n = 2$ to $n = 1$ in Li^{++}, He^{+} and H is ..... (a) 1 : 2 : 3 (b) 1 : 4 : 9 (c) 3 : 2 : 1 (d) 4 : 9 : 36
5. If the nuclear radius of ^{27}Al is 3.6 fermi, the approximate nuclear radius of ^{64}Cu is ..... (a) 2.4 (b) 1.2 (c) 4.8 (d) 3.6
6. The mass of a $_{7}^{3}Li$ nucleus is 0.042 u less than the sum of the masses of all its nucleons. The binding energy per nucleon of $_{3}^{7}Li$ nucleus is nearly ..... (a) 46 MeV (b) 3.6 MeV (c) 3.9 MeV (d) 23 MeV
7. Bohr's postulate is based on .....
   (a) Conservation of linear momentum (b) Quantisation of angular momentum
   (c) Conservation of quantum frequency (d) None of these
8. The ionization energy of hydrogen atom is – 13.6eV. The energy corresponding to a transition between 3rd and 4th orbit is .....
   (a) 3.40 eV (b) 1.51 eV (c) 0.85 eV (d) 0.66 eV
9. When hydrogen atom is in its first excited level, its radius is ..... of the Bohr radius. (a) Twice (b) Same (c) Half (d) Four times
10. Millikan's oil drop experiment established that .....
    (a) Electric charge depends on velocity (b) Electric charge is quantised
    (c) Electron has wave nature (d) Electron has particle nature
11. J.J. Thomson's experiment demonstrated that .....
    (a) Cathode rays are streams of negatively charged ions.
    (b) All the mass of an atom is in the nucleus.
    (c) Specific charge of electrons is much greater than the protons.
    (d) e/m ratio changes when different gases is placed in the discharge tube.
12. Wave number is defined as the number of wave .....
    (a) Produced in one second (b) In a distance of 1 metre
    (c) In a distance of 3×10^8 m (d) In a distance of λ metre

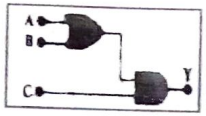
13. The unit of Rydberg constant is ..... (a) m (b) no unit (c) m^{-2} (d) m^{-1}
14. The spectral series of hydrogen atom in UV region is called .....
    (a) Balmer series (b) Lyman series (c) Paschan series (d) Pfund series
15. Cathode rays are nothing but .....
    (a) Electrons (b) Protons (c) Neutrons (d) Hydrogen atoms
16. The charge of an alpha-particle is .....
    (a) Same as that of a proton (b) Twice as that of an electron
    (c) Thrice as that of an proton (d) Twice as that of a neutron
17. Elements having atomic number greater than ..... are radioactive.
    (a) 48 (b) 68 (c) 88 (d) 83
18. Irene Curie and F. Joliot discovered in the year 1934 .....
    (a) Natural radioactivity (b) Fluorescence
    (c) Artificial radioactivity (d) Hydrogen bomb
19. 1 curie is .....
    (a) Activity of 1 g of Uranium (b) 1 disintegration / second
    (c) 3.7×10^{16} becquerel (d) 1.6×10^{12} disintegration / second
20. Graphite is used as a ..... in nuclear reactors.
    (a) Moderator (b) Coolant (c) Detector (d) Fuel
21. Which of the following is not a moderactor ? .....
    (a) Liquid sodium (b) Ordinary water (c) Graphite (d) Heavy water
22. α-rays consist of α-particles, which are ..... nuclei.
    (a) Hydrogen (b) Helium (c) Heavy water (d) Boron
23. Which particle cannot be emitted by radioactive element during their decay ? .....
    (a) Neutrino (b) Helium nuclei (c) Photons (d) Electrons
24. A radiation of a particular wavelength is called a .....
    (a) Spectral line (b) Frequency (c) Wavelength (d) Velocity
25. When an electric field is applied to an atom each of the spectral lines split into several lines. This effect is known as .....
    (a) Zeeman effect (b) Stark effect (c) Raman effect (d) Seebeck effect
26. When a transistor is fully switched on, it is said to be .....
    (a) Shorted (b) Saturated (c) Cut-off (d) Open
27. The electrical series circuit in digital form is .....
    (a) AND (b) OR (c) NOR (d) NAND
28. Doping a semiconductor results in .....
    (a) The decrease in mobile charge carriers
    (b) The change in chemical properties
    (c) The change in the crystal structure
    (d) The breaking of the covalent bond

(P.T.O)

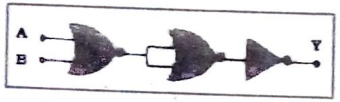
29. The barrier potential of a silicon diode is approximately, ...
(a) 0.7 V (b) 0.3 V (c) 2.0 V (d) 2.2 V

30. The principle in which a solar cell operates .....
(a) Diffusion (b) Recombination (c) Photovoltaic action (d) Carrier flow

31. The output of the following circuit is 1 when the input ABC is .....
(a) 101 (b) 100 (c) 110 (d) 010

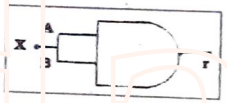


32. The given electrical network is equivalent to .....
(a) AND gate (b) OR gate
(c) NOR gate (d) NOT gate



33. The behaviour of Ge as semi-conductor is due to width of .....
(a) Conduction band being large (b) Forbidden band being small
(c) Conduction band being small (d) Forbidden band being small and narrow

34. The symbol represents .....
(a) NOT gate (b) OR gate (c) AND gate (d) NOR gate

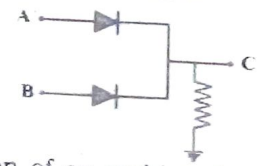


35. A light emitting diode has a voltage drop of 2v across it when 10 mA current is passed. If this LED is to be operated with 6v battery the value of limiting resistor would be .....
(a) 400 Ω (b) 4000 Ω (c) 40 k Ω (d) 300 Ω

36. To obtain OR gate from NOR gate, you will need .....
(a) one NOR gate (b) one NOT gate (c) two NOT gate (d) one OR gate

37. A p-n diode can be used as .....
(a) Condenser (b) Amplifier (c) Rectifier (d) Regulator

38. The output of the given circuit is .....
(a) NOR gate (b) OR gate
(c) NAND (d) AND



39. Diffusion of free electrons across the junction of an unbiased diode produces .....
(a) Forward bias (b) Reverse bias (c) Depletion layer (d) Breakdown

40. The energy level just above the valence band is called ..... level.
(a) Donor (b) Acceptor (c) Ground (d) Conduction

41. The central region of the transistor is .....
(a) Base (b) Emitter (c) Collector (d) Resistor

42. A PNP transistor is like to ..... PN junction diodes placed back-to-back.
(a) Two (b) Three (c) Ten (d) Five

43. Choose the correct statements .....
(I) Germanium atom has 32 orbiting electrons.
(II) Diode has 2 terminals
(III) mA is the unit used to represent the level of a diode forward current I_F.
(IV) The diffused impurities with 3 valence electrons are called donor atoms.
(a) I, II and III only (b) III and IV only (c) I, II and IV only (d) I, III and IV only

44. The circuit in which an inductor and a capacitor are connected in parallel is called as a .....
(a) Tank (b) Series (c) Inductor (d) Capacitor

45. The colour of the emitted light on an LED depends on .....
(a) The material (b) Applied voltage
(c) The geometry of the circuit (d) The type of biasing

46. Completely filled energy levels are called .....
(a) Core levels (b) Compound levels (c) Conduction levels (d) Valence levels

47. A NPN transistor conducts when .....
(a) Both collector and emitter are positive with respect to the base
(b) Collector is + ve and emitter is – ve with respect to the base
(c) Collector is +ve and emitter is same potential with respect to the base
(d) Both collector and emitter are – ve to the base

48. Break down voltage of a diode is 5 V. By which effect this breakdown occurs in diode ? .....
(a) Only Avalanche effect (b) Only Zener effect
(c) Avalanche or Zener effect (d) None of the above

49. The input resistance is .....
(a) 1k Ω (b) 10 Ω (c) 10 k Ω (d) 100 Ω

50. A N-P-N transistor conducts when collector is ..... and emitter is ..... with respect to base.
(a) Positive, negative (b) Positive, positive
(c) Negative, negative (d) Negative, positive

XII - STD	2019 - 2020	Marks : 50	1.00 : Hr.
ONE MARK	PHYSICS		
TEST NO : 5	10. Communication Systems 11. Recent Developments in Physics		

50 x 1 = 50

I. Choose the correct answer :

1. The frequency range of 3 MHz to 30 MHz is used for .....
   (a) Ground wave propagation (b) Space wave propagation (c) Sky wave propagation (d) Satellite communication
2. The signal is affected by noise in a communication system .....
   (a) At the transmitter (b) At the modulator (c) In the channel (d) At the receiver
3. The variation of frequency of carrier wave with respect to the amplitude of the modulating signal is called .....
   (a) Amplitude modulation (b) Frequency modulation (c) Phase modulation (d) Pulse width modulation
4. The output transducer of the communication system converts the radio signal into .....
   (a) Sound (b) Mechanical energy (c) Kinetic energy (d) None of the above
5. The internationally accepted frequency deviation for the purpose of FM broadcasts .....
   (a) 75 kHz (b) 68 kHz (c) 80 kHz (d) 70 kHz
6. The device which is a combination of a receiver and a transmitter is .....
   (a) Amplifier (b) Repeater (c) Transducer (d) Modulator
7. Which of the following is an example of broadcast made of communication ? .....
   (a) Radio (b) Television (c) Mobile (d) Both (a) & (b)
8. Ground wave have wavelength .....
   (a) Less than that of sky waves (b) Greater than that of sky wave (c) Less than that of space waves (d) Equal to that of space waves
9. A ground receiver in line of sight communication cannot receive direct waves due to .....
   (a) Its low frequency (b) Curvature of each (c) Its high intensity (d) Smaller antenna
10. In frequency modulation .....
    (a) The amplitude of modulated wave varies as frequency.
    (b) The frequency of modulated wave varies as amplitude the frequency.
    (c) The amplitude of modulated wave varies as amplitute of carrier wave.
    (d) The frequency of modulated wave varies as frequency of modulating wave.
11. In modulation process, radio frequency wave is termed as .....
    (a) Modulated wave (b) Modulating wave (c) Carrier wave (d) None

12. An EM wave travels in free space, only one of the following can happen to them .....
    (a) Reflection (b) Absorption (c) Refraction (d) Attenuation
13. The most commonly employed modulation in satellite communication is the .....
    (a) Amplitude modulation (b) FM (c) Phase modulation (d) All
14. For long distance, shortwave radio broadcasting ..... wave is used.
    (a) Ground (b) Ionospheric (c) Sky (d) Direct
15. When the transmitting and receiving antennas are close to the ground, the type of radio-wave propagation is ..... propagation.
    (a) Ground (b) Space (c) Sky (d) Ionospheric
16. During propagation of waves, where the electron density is large in ionosphere, the angle of refraction is .....
    (a) 49° (b) 90° (c) 67° (d) 180°
17. In FM, frequency variation of the carrier wave depends upon the ..... amplitude of the signal.
    (a) Average (b) Highest (c) Constant (d) Instantaneous
18. Noise is a form of ..... variation.
    (a) Time (b) Phase (c) Amplitude (d) Frequency
19. The electron gun assembly contains a .....
    (a) CRO (b) Cathode and a control grid (c) Multimeter (d) Power supply
20. The acronym for 'Radio Detection and Ranging' is known as .....
    (a) RDR (b) RDAR (c) RADAR (d) DER
21. The transmitter - receiver switch is also called .....
    (a) Scanner (b) Multiplexer (c) Mixer (d) Duplexer
22. If a signal can take any value within a given range it is ..... signal.
    (a) Analog (b) Scanned (c) Simultaneous (d) Digital
23. A satellite which appears to be stationary at a given spot above the equator is called a ..... satellite.
    (a) Geostationary (b) Polar (c) Elliptical (d) Spherical
24. Match the following :

(a) Carrier signal	-	(a) Input signal
(b) Baseband signal	-	(b) Radio signal
(c) Centre frequency	-	(c) Point-point communication
(d) Wireline communication	-	(d) Resting frequency

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

25. Mobile communication is easily established by ..... communication.
(a) Mechanical switches (b) Telephone cables (c) Satellite (d) Optical fibres

26. "Sky wax" is an application of nano product in the field of .....
(a) Medicine (b) Textile (c) Sports (d) Automotive industry

27. The technology used for stopping the brain from processing pain is .....
(a) Precision medicine (b) Wireless brain sensor (c) Virtual reality (d) Radiology

28. The particle size of ZnO material is 30 nm. Based on the dimension it is classified as .....
(a) Bulk material (b) Nanomaterial (c) Soft material (d) Magnetic material

29. The blue print for making ultra durable synthetic material is mimicked from .....
(a) Lotus leaf (b) Morpho butterfly (c) Parrot fish (d) Peacock feather

30. The gravitational waves were theoretically proposed by .....
(a) Conrad Rontgen (b) Marie Curie (c) Albert Einstein (d) Edward Purcell

31. The alloys used for muscle wires in Robots are .....
(a) Shape memory alloys (b) Gold copper alloys
(c) Gold silver alloys (d) Two dimensional alloys

32. Which one of the following is the natural nanomaterial .....
(a) Peacock feather (b) Peacock beak (c) Grain of sand (d) Skin of the Whale

33. The materials used in Robotics are .....
(a) Aluminium and silver (b) Silver and gold
(c) Copper and gold (d) Steel and aluminum

34. The particle which gives mass to protons and neutrons are .....
(a) Higgs particle (b) Einstein particle (c) Nanoparticle (d) Bulk particle

35. The method of making nanomaterial by assembling the atoms is called .....
(a) Top down approach (b) Bottom up approach
(c) Cross down approach (d) Diagonal approach

36. Choose the correct statements .....
(I) The controller also known as the brain.
(II) George Devol invented the first digitally operated programmable robot
(III) Ball milling is synthesized by bottom up approach.
(IV) Crystals of a mineral called fluorapatite.
(a) I & II only (b) II & III only (c) III & IV only (d) I, II, IV only

37. A single strand of DNA, the building block of all living things, is about ..... nanometers wide.
(a) Two (b) Three (c) Four (d) Five

38. Plasma etching and chemical vapour deposition are synthesized by .....
(a) Bottom - up approach (b) Top-down approach
(c) Bottom - down approach (d) Top - up approach

39. ..... is synthesized top down approach.
(a) Ball milling (b) Plasma etching (c) Lithography (d) Vapour deposition

40. George Devol invented the first digitally operated programmable robot called .....
(a) Unimate (b) Robotics (c) Motors (d) Generators

41. In ..... it was established that atoms are made up of electrons, protons and neutrons.
(a) 1945 (b) 1923 (c) 1930 (d) 1927

42. Nanoscience is the science of object with typical sizes of .....
(a) 1–100 μm (b) 1 – 100 nm (c) 1 – 100 cm (d) 1 – 100 m

43. Best example for applications of nano technology .....
(a) Chemical industry (b) Engineering (c) Medicine (d) All of these

44. Bulk particles of nanoparticles are synthesized by .....
(a) Top-down approach (b) Bottom - up approach
(c) Top-top approach (d) Bottom - real approach

45. Zno is an example of .....
(a) Bulk solid (b) Nano Solid (c) Both (a) and (b) (d) None of the above

46. The size of the Nano robots is reduced to ..... level to perform a task in very small space.
(a) Macroscopic (b) Robots DNA (c) Microscopic (d) Bacteria

47. If the particle of a solid is of size less than 100 nm, it is said to be a .....
(a) Nano particle (b) Nano bytes (c) Nano solid (d) Nano technology

48. Chinese scientists have created the world's first autonomous ..... to combat caner tumours.
(a) RNA Robot (b) DNA Robot (c) m RNA Robot (d) r RNA Robot

49. Muscle wires can contract by ..... when electric current is passed through them .....
(a) 5 % (b) 7 % (c) 25 % (d) 50 %

50. ..... Scanning Electron Micrograph (SEM) showing the nano structures on the surface of a leaf from a lotus plant.
(a) Parrot fish (b) Morpho butterfly (c) Lotus leaf surface (d) Peacock feathers

XII - STD - ONE MARK TEST KEYS, 2019 - 2020

PHYSICS - EM

KEYS TEST NO : 1

I.	1. (b)	2. (a)	3. (c)	4. (a)	5. (a)	6. (d)	7. (c)	8. (c)	9. (a)	10. (d)
	11. (c)	12. (b)	13. (c)	14. (d)	15. (a)	16. (d)	17. (a)	18. (d)	19. (c)	20. (c)
	21. (d)	22. (c)	23. (a)	24. (c)	25. (c)	26. (a)	27. (c)	28. (d)	29. (b)	30. (b)
	31. (c)	32. (b)	33. (c)	34. (d)	35. (b)	36. (b)	37. (c)	38. (a)	39. (a)	40. (a)
	41. (b)	42. (c)	43. (c)	44. (d)	45. (a)	46. (d)	47. (b)	48. (b)	49. (c)	50. (c)

KEYS TEST NO : 2

I.	1. (d)	2. (d)	3. (a)	4. (a)	5. (c)	6. (a)	7. (a)	8. (d)	9. (b)	10. (c)
	11. (b)	12. (d)	13. (a)	14. (a)	15. (b)	16. (a)	17. (b)	18. (d)	19. (b)	20. (a)
	21. (b)	22. (b)	23. (a)	24. (b)	25. (c)	26. (d)	27. (a)	28. (c)	29. (d)	30. (b)
	31. (a)	32. (c)	33. (d)	34. (d)	35. (d)	36. (b)	37. (b)	38. (c)	39. (c)	40. (d)
	41. (d)	42. (b)	43. (b)	44. (a)	45. (c)	46. (c)	47. (b)	48. (b)	49. (a)	50. (d)

KEYS TEST NO : 3

I.	1. (d)	2. (c)	3. (b)	4. (c)	5. (d)	6. (a)	7. (b)	8. (b)	9. (d)	10. (d)
	11. (a)	12. (c)	13. (d)	14. (a)	15. (c)	16. (a)	17. (c)	18. (d)	19. (b)	20. (d)
	21. (a)	22. (b)	23. (c)	24. (c)	25. (c)	26. (d)	27. (d)	28. (d)	29. (d)	30. (c)
	31. (c)	32. (c)	33. (c)	34. (d)	35. (a)	36. (c)	37. (a)	38. (c)	39. (b)	40. (c)
	41. (d)	42. (c)	43. (d)	44. (a)	45. (c)	46. (a)	47. (a)	48. (b)	49. (b)	50. (a)

KEYS TEST NO : 4

I.	1. (b)	2. (c)	3. (d)	4. (d)	5. (c)	6. (b)	7. (b)	8. (d)	9. (d)	10. (b)
	11. (c)	12. (d)	13. (d)	14. (b)	15. (a)	16. (b)	17. (d)	18. (c)	19. (c)	20. (a)
	21. (a)	22. (b)	23. (c)	24. (a)	25. (b)	26. (b)	27. (a)	28. (c)	29. (a)	30. (c)
	31. (a)	32. (c)	33. (d)	34. (a)	35. (a)	36. (a)	37. (c)	38. (b)	39. (c)	40. (b)
	41. (a)	42. (a)	43. (a)	44. (a)	45. (a)	46. (a)	47. (b)	48. (c)	49. (a)	50. (b)

KEYS TEST NO : 5

I.	1. (c)	2. (c)	3. (b)	4. (a)	5. (a)	6. (b)	7. (d)	8. (b)	9. (c)	10. (d)
	11. (c)	12. (d)	13. (b)	14. (b)	15. (a)	16. (b)	17. (d)	18. (c)	19. (b)	20. (c)
	21. (d)	22. (a)	23. (a)	24. (d)	25. (c)	26. (c)	27. (c)	28. (b)	29. (c)	30. (c)
	31. (a)	32. (a)	33. (d)	34. (a)	35. (b)	36. (d)	37. (b)	38. (a)	39. (d)	40. (a)
	41. (c)	42. (b)	43. (d)	44. (a)	45. (c)	46. (c)	47. (c)	48. (b)	49. (a)	50. (c)