

### BPT 2021

Q. No. 1 0032001	<b>The position vector of a particle is given by <math>\vec{r} = 3t\hat{i} + t^2\hat{j}</math>, find out the velocity vector of the particle.</b>
Option A	$3t\hat{i} + 2t\hat{j}$
Option B	$3\hat{i} + 2t\hat{j}$
Option C	$3t\hat{i} + 2t\hat{j}$
Option D	$3\hat{i} + t^2\hat{j}$
Correct Option	<b>B</b>

Q. No. 2 0032002	<b>The dimensional formula of magnetic flux is, [Given, mass=M, length=L, time=T, current=A]</b>
Option A	$[ML^3T^{-2}A^{-1}]$
Option B	$[ML^2T^{-2}A^{-2}]$
Option C	$[ML^1T^{-3}A^{-1}]$
Option D	$[ML^2T^{-2}A^{-1}]$
Correct Option	<b>D</b>

Q. No. 3 0032003	<b>Moment of inertia of a rod of mass 'm' and length 'l' about its one end is 'I'. If one-fourth of its length is cut away. Find out the moment of inertia of the remaining rod about its one end.</b>
Option A	$\frac{3}{4}I$
Option B	$\frac{9}{16}I$
Option C	$\frac{1}{16}I$
Option D	$\frac{27}{64}I$
Correct Option	<b>D</b>

Q. No. 4 0032004	<b>Find out the height 'h' at which the value of 'g' becomes 1/49 of its value at the surface of the earth. Given the radius of earth is 'R'.</b>
Option A	3R
Option B	2R
Option C	6R
Option D	4R
Correct Option	<b>C</b>

Q. No. 5 0032005	<b>According to Kepler's law of planetary motion, if 'T' is the time-period and 'r' is the orbital radius, then for two planets these are related as</b>
Option A	$\left(\frac{T_1}{T_2}\right)^{3/2} = \frac{r_1}{r_2}$
Option B	$\left(\frac{T_1}{T_2}\right)^2 = \left(\frac{r_1}{r_2}\right)^3$
Option C	$\left(\frac{T_1}{T_2}\right)^{1/2} = \frac{r_1}{r_2}$
Option D	$\left(\frac{T_1}{T_2}\right)^3 = \frac{r_1}{r_2}$
Correct Option	<b>B</b>

Q. No. 6 0032006	<b>An artificial satellite moves in a circular orbit around the earth. Total energy of the satellite is given by 'E'. Find out the potential energy of the satellite.</b>
Option A	-2E
Option B	2E
Option C	$\frac{2}{3}E$
Option D	$-\frac{2}{3}E$
Correct Option	<b>A</b>

Q. No. 7 0032007	<b>A particle executing simple harmonic motion covers a distance equal to half its amplitude in one second. Calculate the time period of the simple harmonic motion.</b>
Option A	3 s
Option B	4 s
Option C	8 s
Option D	12 s
Correct Option	<b>D</b>

Q. No. 8 0032008	<b>A body oscillates with SHM according to the equation, <math>x = 5 \cos(2\pi t + \frac{\pi}{4})</math>. Find out its instantaneous displacement at t=1 sec. [Use S.I units]</b>
Option A	$\frac{\sqrt{2}}{5}$
Option B	$\frac{5}{\sqrt{2}}$
Option C	$\frac{\sqrt{3}}{2}$
Option D	$\frac{1}{\sqrt{2}}$

Correct Option	<b>B</b>
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Q. No. 9 0032009	<b>Young's modulus (Y) and rigidity modulus (G) for most of the materials is related as</b>
Option A	$G=2Y$
Option B	$G = \frac{Y}{3}$
Option C	$G = \frac{Y}{5}$
Option D	$G = \frac{Y}{8}$
Correct Option	<b>B</b>

Q. No. 10 0032010	<b>Water flows in a streamlined manner through a capillary tube of radius 'r' at the pressure difference 'P' and at the rate of flow 'Q'. What will be the rate of flow if the radius is reduced to 'r/2' and the pressure increased to '2P'.</b>
Option A	2Q
Option B	Q
Option C	Q/4
Option D	Q/8
Correct Option	<b>D</b>

Q. No. 11 0032011	<b>If 1000 drops are combined to form a larger drop, then the ratio of surface energy of smaller drop to the larger drop will be</b>
Option A	1 : 10
Option B	1 : 1000
Option C	1 : 100
Option D	0.2 : 1
Correct Option	<b>C</b>

Q. No. 12 0032012	<b>A gas with <math>\gamma = 1.4</math> undergoes the adiabatic process of compression, if the pressure is increased by 0.5%, then the volume decreased by</b>
Option A	0.5%
Option B	1%
Option C	0.1%
Option D	0.25%
Correct Option	<b>A</b>

Q. No. 13 0032013	<b>One mole of gas expands with temperature T such that its volume <math>V=kT^2</math>, where k is a constant. If the temperature of the gas changes by <math>60^{\circ}\text{C}</math>, Calculate the work done by the gas.</b>
Option A	120R
Option B	$R \ln 60$

Option C	kR ln60
Option D	60kR
Correct Option	<b>A</b>

Q. No. 14 0032014	<b>Two stars 'X' and 'Y' radiate maximum energy at the wavelength of 360 nm and 480 nm respectively. Then the ratio of the surface temperature of 'X' and 'Y' is</b>
Option A	3:4
Option B	81:256
Option C	4:3
Option D	256:81
Correct Option	<b>C</b>

Q. No. 15 0032015	<b>If 1 g of steam is mixed with 1 g of ice, then what will be the resultant temperature of the mixture?</b>
Option A	50°C
Option B	100° c
Option C	230° C
Option D	270° C
Correct Option	<b>B</b>

Q. No. 16 0032016	<b>Find out the amplitude of a wave represented by displacement equation</b> $y = \frac{1}{\sqrt{a}} \sin \omega t \pm \frac{1}{\sqrt{b}} \cos \omega t.$
Option A	$\frac{a+b}{ab}$
Option B	$\frac{\sqrt{a} + \sqrt{b}}{ab}$
Option C	$\frac{\sqrt{a} \pm \sqrt{b}}{ab}$
Option D	$\sqrt{\frac{a+b}{ab}}$
Correct Option	<b>D</b>

Q. No. 17 0032017	<b>Calculate the path difference between two waves, <math>y_1 = p_1 \sin(\omega t - \frac{2\pi x}{\lambda})</math> and <math>y_2 = p_2 \cos(\omega t - \frac{2\pi x}{\lambda} + \varphi).</math></b>
Option A	$\frac{2\pi}{\lambda} [\varphi]$
Option B	$\frac{2\pi}{\lambda} [\varphi - \frac{\pi}{2}]$
Option C	

	$\frac{\lambda}{2\pi} [\varphi]$
Option D	$\frac{\lambda}{2\pi} [\varphi + \frac{\pi}{2}]$
Correct Option	<b>D</b>

Q. No. 18 0032018	<b>If a closed organ pipe has the same third harmonic frequency as that of an open organ pipe, then find out the ratio of their lengths.</b>
Option A	4:5
Option B	3:4
Option C	1:2
Option D	1:1
Correct Option	<b>C</b>

Q. No. 19 0032019	<b>Two condensers of capacity <math>0.3\mu\text{F}</math> and <math>0.6\mu\text{F}</math> respectively are connected in series. The combination is connected across a potential of 6V. The ratio of the energies stored by the condensers will be</b>
Option A	4:1
Option B	1:4
Option C	2:1
Option D	1:2
Correct Option	<b>C</b>

Q. No. 20 0032020	<b>The dielectric constant of pure water is 81. Calculate the permittivity.</b>
Option A	$7.16 \times 10^{-10}$ MKS unit
Option B	$8.86 \times 10^{-12}$ MKS unit
Option C	$1.02 \times 10^{13}$ MKS unit
Option D	$4.36 \times 10^{12}$ MKS unit
Correct Option	<b>A</b>

Q. No. 21 0032021	<b>A capacitor of <math>2\mu\text{F}</math> is charged to 200V and then plates of the capacitor are connected to a resistance wire. Calculate the heat produced in joule unit</b>
Option A	$2 \times 10^{-2}$
Option B	$4 \times 10^{-2}$
Option C	$4 \times 10^4$
Option D	$4 \times 10^{10}$
Correct Option	<b>B</b>

Q. No. 22 0032022	<b>The dimension of mobility of charge carriers. [given, M= mass, T=time, A= Current]</b>
Option A	$\text{M}^{-2}\text{T}^2\text{A}$

Option B	$M^{-1}T^2A$
Option C	$M^2T^{-1}A^{-1}$
Option D	$MT^{-2}A^{-1}$
Correct Option	<b>B</b>

Q. No. 23 0032023	<b>The magnetic induction produced at the centre of a circular loop carrying current is 'B'. The magnetic moment of the loop of radius 'R' is</b>
Option A	$\frac{BR^2}{2\pi\mu_0}$
Option B	$\frac{2\pi BR^3}{\mu_0}$
Option C	$\frac{BR^2}{2\pi\mu_0}$
Option D	$\frac{2\pi BR^2}{\mu_0}$
Correct Option	<b>B</b>

Q. No. 24 0032024	<b>If a steel wire of length 'L' and magnetic moment 'M' is bent into a semi-circular arc, what will be the new magnetic moment</b>
Option A	$M \times L$
Option B	$\frac{M}{L}$
Option C	$\frac{2M}{\pi}$
Option D	$M$
Correct Option	<b>C</b>

Q. No. 25 0032025	<b>A proton and a Helium nucleus are shot into a magnetic field at right angles to the field with the same kinetic energy. calculate the ratio of their radii.</b>
Option A	1:1
Option B	1:2
Option C	2:1
Option D	1:4
Correct Option	<b>A</b>

Q. No. 26 0032026	<b>What will happen if you heat a ferromagnetic substance above Curie temperature</b>
Option A	becomes paramagnetic
Option B	becomes diamagnetic
Option C	remains ferromagnetic

Option D	becomes electromagnetic
Correct Option	<b>A</b>

Q. No. 27 0032027	<b>In an AC circuit, Voltage (V) and current (I) is given by, <math>V=150\sin(150t)V</math>, and <math>I = 150 \sin(150t + \frac{\pi}{3})A</math>. Calculate the power dissipation in the circuit.</b>
Option A	2500 W
Option B	2430 W
Option C	5625 W
Option D	5650 W
Correct Option	<b>C</b>

Q. No. 28 0032028	<b>The power factor of an R-L circuit is <math>\frac{1}{\sqrt{2}}</math>. If the frequency of the AC is doubled, calculate the power factor</b>
Option A	$1/\sqrt{11}$
Option B	$1/\sqrt{7}$
Option C	$1/\sqrt{5}$
Option D	$1/\sqrt{3}$
Correct Option	<b>C</b>

Q. No. 29 0032029	<b>An air core coil and an electric bulb are connected in the series with an AC source. If an iron rod is put in the coil, then the intensity of the bulb will be</b>
Option A	remain same
Option B	increase
Option C	decrease
Option D	first decrease and then increase
Correct Option	<b>C</b>

Q. No. 30 0032030	<b>The rms current in an AC circuit is 2 A. If the wattless current be <math>\sqrt{3}</math> A, what is the power factor of the circuit?</b>
Option A	$\frac{1}{3}$
Option B	$\frac{1}{2}$
Option C	$\frac{\sqrt{3}}{2}$
Option D	$\frac{1}{4}$
Correct Option	<b>B</b>

Q. No. 31 0032031	<b>Which part of the electromagnetic spectrum is used to cook food?</b>
Option A	Ultraviolet rays
Option B	X - rays
Option C	Infrared rays
Option D	Microwave rays
Correct Option	<b>D</b>

Q. No. 32 0032032	<b>The ratio of contributions made by electric field and magnetic field components to the intensity of an EM wave is</b>
Option A	$c:1$
Option B	$c^2:1$
Option C	$1:1$
Option D	$\sqrt{c}:1$
Correct Option	<b>C</b>

Q. No. 33 0032033	<b>The transverse nature of electromagnetic wave is proved by which of the following</b>
Option A	Interference phenomena
Option B	Diffraction phenomena
Option C	Dispersion phenomena
Option D	Polarisation phenomena
Correct Option	<b>D</b>

Q. No. 34 0032034	<b>The angle of minimum deviation for a glass prism with <math>\mu = \sqrt{3}</math>, equals the refracting angle of the prism. Calculate the angle of the prism.</b>
Option A	$30^\circ$
Option B	$60^\circ$
Option C	$45^\circ$
Option D	$65^\circ$
Correct Option	<b>B</b>

Q. No. 35 0032035	<b>A concave lens of focal length 'f' forms an image which is 1/3 times the size of the object. Calculate the distance of the object from the lens.</b>
Option A	$2f$
Option B	$3f$
Option C	$\frac{2}{3}f$
Option D	$\frac{3}{2}f$
Correct Option	<b>A</b>



Q. No. 36 0032036	<b>The diameter of the objective of a telescope is 200 cm. Calculate the resolving power of the telescope. [Given, wavelength (<math>\lambda</math>)=5000Å]</b>
Option A	$3.28 \times 10^5$
Option B	$3.28 \times 10^6$
Option C	$1.5 \times 10^6$
Option D	$1 \times 10^6$
Correct Option	<b>B</b>

Q. No. 37 0032037	<b>In Young's double slit experiment, the locus of the point 'P' lying in a plane with a constant path difference between two interfering waves is</b>
Option A	a hyperbola
Option B	a straight line
Option C	an ellipse
Option D	a parabola
Correct Option	<b>A</b>

Q. No. 38 0032038	<b>In Young's double slit experiment, the ratio of maximum and minimum intensities in the fringe system is 9:1. The ratio of amplitudes of the coherent sources is</b>
Option A	9:1
Option B	3:1
Option C	2:1
Option D	1:1
Correct Option	<b>C</b>

Q. No. 39 0032039	<b>Sodium and copper have work functions 2.3 eV and 4.5 eV respectively. Then the ratio of their threshold wavelengths is nearest to</b>
Option A	1:2
Option B	2:1
Option C	1:4
Option D	4:1
Correct Option	<b>B</b>

Q. No. 40 0032040	<b>Find out the maximum wavelength of light that can cause photoelectric effect in a specific material whose work function is 2.5 eV. [given <math>h=4.14 \times 10^{-15}</math> eV-s]</b>
Option A	237 nm
Option B	749 nm
Option C	397 nm
Option D	497 nm
Correct Option	<b>D</b>

Q. No. 41 0032041	<b>An electron of mass 'm' and photon have same energy 'E'. The ratio of the de-Broglie wavelengths associated with them is [given, c= velocity of light]</b>
Option A	

	$\left(\frac{E}{2m}\right)^{\frac{1}{2}}$
Option B	$c(2mE)^{\frac{1}{2}}$
Option C	$\frac{1}{c} \left(\frac{2m}{E}\right)^{\frac{1}{2}}$
Option D	$\frac{1}{c} \left(\frac{E}{2m}\right)^{\frac{1}{2}}$
Correct Option	<b>D</b>

Q. No. 42 0032042	<b>The wavelength <math>\lambda_e</math> of an electron and <math>\lambda_p</math> of a photon of same energy E are related by</b>
Option A	$\lambda_p \propto \lambda_e^2$
Option B	$\lambda_p \propto \lambda_e$
Option C	$\lambda_p \propto \sqrt{\lambda_e}$
Option D	$\lambda_p \propto \frac{1}{\sqrt{\lambda_e}}$
Correct Option	<b>A</b>

Q. No. 43 0032043	<b>Which series of hydrogen spectrum corresponds to ultraviolet region?</b>
Option A	Balmer series
Option B	Brackett series
Option C	Paschen series
Option D	Lyman series
Correct Option	<b>D</b>

Q. No. 44 0032044	<b>In Bohr model of Hydrogen atom, the force on the electron depends on the principal quantum number (n) as</b>
Option A	independent of n
Option B	$F \propto 1/n^5$
Option C	$F \propto 1/n^4$
Option D	$F \propto 1/n^3$
Correct Option	<b>C</b>

Q. No. 45 0032045	<b>The control rods used in a nuclear reactor can be made up of</b>
Option A	graphite
Option B	cadmium
Option C	lead

Option D	barium
Correct Option	<b>B</b>

Q. No. 46 0032046	<b>The relationship between decay constant '<math>\lambda</math>' and half-life 'T' of a radioactive substance is</b>
Option A	$\lambda = \log_{10}(2)/T$
Option B	$\lambda = \log_e(2)/T$
Option C	$\lambda = \log_2(10)/T$
Option D	$\lambda = \log_2(e)/T$
Correct Option	<b>B</b>

Q. No. 47 0032047	<b>Which one of the following is called the universal gate?</b>
Option A	OR gate
Option B	NAND gate
Option C	AND gate
Option D	XOR gate
Correct Option	<b>B</b>

Q. No. 48 0032048	<b>When a p-n junction is reversed, then the current through the junction is mainly due to</b>
Option A	only diffusion charges
Option B	neither drift nor diffusion charges
Option C	both drift and diffusion charges
Option D	only drift of charges
Correct Option	<b>D</b>

Q. No. 49 0032049	<b>If the current gain (<math>\alpha</math>) of a transistor is 0.98, then what is the value of current gain (<math>\beta</math>) of the transistor?</b>
Option A	0.49
Option B	49
Option C	4.9
Option D	5
Correct Option	<b>B</b>

Q. No. 50 0032050	<b>What is the value of <math>\bar{A} + A</math> in Boolean algebra</b>
Option A	A
Option B	0
Option C	1
Option D	$\bar{A}$
Correct Option	<b>C</b>

Q. No. 51 0062051	<b>The -ve charged particles is called.</b>
Option A	Anion
Option B	Cation
Option C	Radical
Option D	Atom
Correct Option	<b>A</b>

Q. No. 52 0062052	<b>If 40g NaOH dissolve in 250ml water, then what is the molarity of the solution</b>
Option A	4.0 M
Option B	5.0 M
Option C	8.0 M
Option D	6.0 M
Correct Option	<b>A</b>

Q. No. 53 0062053	<b>The magnetic quantum number (m) specifies</b>
Option A	Size of orbitals
Option B	Shape of orbitals
Option C	Orientation of orbital
Option D	Nuclear stability
Correct Option	<b>C</b>

Q. No. 54 0062054	<b>From the following sets of quantum numbers <math>n=3, l=2, m=-2, s=-1/2</math>. Choose the correct orbital</b>
Option A	3s
Option B	3p
Option C	3d
Option D	3f
Correct Option	<b>C</b>

Q. No. 55 0062055	<b>_____ has the atomic number 52</b>
Option A	I
Option B	Te
Option C	Xe
Option D	Br
Correct Option	<b>B</b>

Q. No. 56 0062056	<b>Einsteinium is of which family element ?</b>
Option A	Actinides

Option B	Lanthanides
Option C	Nobel gases
Option D	Transition elements
Correct Option	<b>A</b>

Q. No. 57 0062057	<b>Which of the following is paramagnetic?</b>
Option A	CO
Option B	O <sub>2</sub>
Option C	CN <sup>-</sup>
Option D	NO <sup>+</sup>
Correct Option	<b>B</b>

Q. No. 58 0062058	<b>Which one of the following has highest bond angle?</b>
Option A	CH <sub>4</sub>
Option B	NH <sub>3</sub>
Option C	H <sub>2</sub> O
Option D	CO <sub>2</sub>
Correct Option	<b>D</b>

Q. No. 59 0062059	<b>The states of matter that shows the uniformity of behaviour</b>
Option A	Gases
Option B	Super cooled liquid
Option C	Plasma
Option D	Solids
Correct Option	<b>A</b>

Q. No. 60 0062060	<b>The volume of 5.6g of carbon monoxide gas at 27°C and 0.0821 atm is</b>
Option A	6L
Option B	60L
Option C	0.6L
Option D	3L
Correct Option	<b>A</b>

Q. No. 61 0062061	<b>Best on the first law of thermodynamics, which one of the following is correct?</b>
Option A	For an isothermal process, $q = +W$
Option B	For an isochoric process, $\Delta U = -q$
Option C	For an adiabatic process, $\Delta U = -W$
Option D	For acyclic process, $q = -W$

Correct Option	<b>D</b>
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Q. No. 62 0062062	<b>Which orbital among the following has the highest energy?</b>
Option A	$n = 4, l = 1$
Option B	$n = 4, l = 0$
Option C	$n = 3, l = 2$
Option D	$n = 3, l = 1$
Correct Option	<b>A</b>

Q. No. 63 0062063	<b>Which of the following aqueous solution will have highest Ph?</b>
Option A	NaCl
Option B	CH <sub>3</sub> COONa
Option C	K <sub>2</sub> CO <sub>3</sub>
Option D	NH <sub>4</sub> Cl
Correct Option	<b>C</b>

Q. No. 64 0062064	<b>Solubility of Mg(OH)<sub>2</sub> is S mol/L. Its K<sub>sp</sub> is</b>
Option A	$S^2$
Option B	$2S^2$
Option C	$4S^2$
Option D	$4S^3$
Correct Option	<b>D</b>

Q. No. 65 0062065	<b>The oxidation state of Cr in CrO<sub>5</sub> is</b>
Option A	+6
Option B	+8
Option C	+5
Option D	-5
Correct Option	<b>A</b>

Q. No. 66 0062066	<b>H<sub>2</sub>O<sub>2</sub> used in rocket has the concentration</b>
Option A	50%
Option B	90%
Option C	70%
Option D	30%
Correct Option	<b>B</b>

Q. No. 67	<b>Water shows anomalous behaviour between</b>
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0062067	
Option A	0° to -4°C
Option B	0° to 4°C
Option C	0° to 5°C
Option D	0° to 6°C
Correct Option	<b>B</b>

Q. No. 68 0062068	<b>Solvays process used for the manufacture of</b>
Option A	NaOH
Option B	(Na <sub>2</sub> CO <sub>3</sub> .10H <sub>2</sub> O)
Option C	K <sub>2</sub> CO <sub>3</sub>
Option D	NaO <sub>2</sub>
Correct Option	<b>B</b>

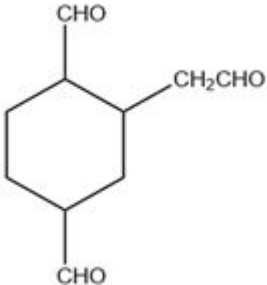
Q. No. 69 0062069	<b>Carnallite is the mineral of</b>
Option A	Na
Option B	Ca
Option C	Mg
Option D	Cu
Correct Option	<b>C</b>

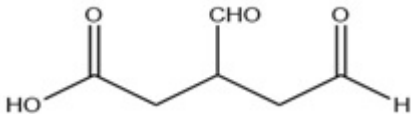
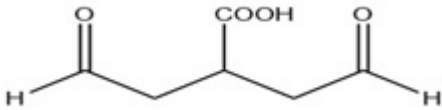
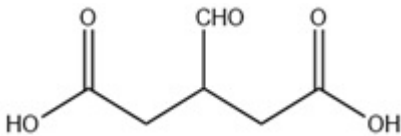
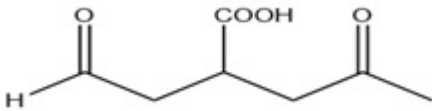
Q. No. 70 0062070	<b>Which of the ions are present in KHF<sub>2</sub> ?</b>
Option A	K <sup>+</sup> , F <sup>-</sup> , H <sup>+</sup>
Option B	K <sup>+</sup> , F <sup>-</sup> , HF <sup>-</sup>
Option C	K <sup>+</sup> and (HF <sub>2</sub> ) <sup>-</sup>
Option D	(KHF) <sup>+</sup> and F <sup>-</sup>
Correct Option	<b>C</b>

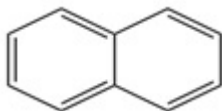

Q. No. 71 0062071	<b>P<sub>4</sub> + 3NaOH + 3H<sub>2</sub>O → 3NaH<sub>2</sub>PO<sub>2</sub> + PH<sub>3</sub> this reaction is an example of</b>
Option A	Disproportionation Reaction
Option B	Neutralisation Reaction
Option C	Pyrolytic Reaction
Option D	Pyrolysis Reaction
Correct Option	<b>A</b>

Q. No. 72 0062072	<b>Which of the following compound can form three types of salt?</b>
Option A	H <sub>3</sub> PO <sub>2</sub>



Option B	$\text{H}_3\text{PO}_3$
Option C	$\text{H}_3\text{PO}_4$
Option D	$\text{H}_3\text{PO}_3$
Correct Option	<b>C</b>

Q. No. 73 0062073	<b>IUPAC name of</b> 
Option A	2-formylmethylcyclohexane-1,4-dicarbaldehyde
Option B	(cyclohexan-2,5-dialyl)ethanol
Option C	Cyclohexane-1,2,4-carbaldehyde
Option D	Cyclohexane-2-formylmethyl-1,4-dial
Correct Option	<b>A</b>

Q. No. 74 0062074	<b>The structure of 3-formylpentane-1,2-dioic acid is</b>
Option A	
Option B	
Option C	
Option D	
Correct Option	<b>C</b>

Q. No. 75 0062075	<b>Which of the following is aromatic compound</b>
Option A	
Option B	



Option C	
Option D	
Correct Option	<b>A</b>

Q. No. 76 0062076	<b>How many chloride ions are surrounding sodium ion in Sodium chloride?</b>
Option A	4
Option B	8
Option C	6
Option D	12
Correct Option	<b>C</b>

Q. No. 77 0062077	<b>Which of the following compound does not exhibit Frenkel defect?</b>
Option A	AgBr
Option B	AgCl
Option C	KBr
Option D	ZnS
Correct Option	<b>C</b>

Q. No. 78 0062078	<b>What is the packing efficiency of Body Centred Cubic unit cell ?</b>
Option A	0.52
Option B	0.68
Option C	0.74
Option D	0.82
Correct Option	<b>B</b>

Q. No. 79 0062079	<b>Which of the following solutions shows positive deviation from Raoult's law?</b>
Option A	Ethanol + Water
Option B	Acetone + Chloroform
Option C	Water + Nitric acid
Option D	Pyridine + Acetic acid
Correct Option	<b>A</b>

Q. No. 80 0062080	<b>Which of the following aqueous solution has highest value of depression of freezing point?</b>
Option A	KCl
Option B	$C_6H_{12}O_6$

Option C	$\text{Al}_2(\text{SO}_4)$
Option D	$\text{K}_2\text{SO}_4$
Correct Option	<b>C</b>

Q. No. 81 0062081	<b>If 4 amp current passes through a acidified water for 30 min. Then what volume <math>\text{H}_2</math> gas will form in STP?</b>
Option A	1100.84 ml
Option B	835.52 ml
Option C	1671.3 ml
Option D	927.4 ml
Correct Option	<b>B</b>

Q. No. 82 0062082	<b>What time will required for the 99% completion of 1<sup>st</sup> order reaction, if rate constant of the reaction is K</b>
Option A	$t = 2.303/K$
Option B	$t = 0.693/K$
Option C	$t = 6.909/K$
Option D	$t = 4.606/K$
Correct Option	<b>D</b>

Q. No. 83 0062083	<b>For the voltaic cell:</b> $\text{Fe}(\text{S}) \text{Fe}^{2+}  \text{Ag}^+ \text{Ag}(\text{S})$ Find $E^\circ_{\text{cell}}$ . $E^\circ(\text{Fe}^{2+}/\text{Fe}) = -0.44\text{V}$ , $E^\circ(\text{Ag}^+/\text{Ag}) = 0.80\text{V}$
Option A	0.36V
Option B	0.63V
Option C	1.24V
Option D	2.48V
Correct Option	<b>C</b>

Q. No. 84 0062084	<b>Kohlrausch's Law is applicable :</b>
Option A	To aqueous solution of strong electrolytes
Option B	Applicable to electrolyte dissolved in a solvent of low polarity only
Option C	To electrolytes at temperature above room temperature
Option D	To electrolytic solution at infinite dilution
Correct Option	<b>D</b>

Q. No. 85 0062085	<b>What is the chemical formula of 'Fool's gold' ?</b>
Option A	$\text{FeS}_2$
Option B	$\text{FeO}_2$
Option C	$\text{CrO}_3$
Option D	$\text{MnO}_2$

Correct Option	<b>A</b>
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Q. No. 86 0062086	<b>Which one of the following is emulsion ?</b>
Option A	Milk
Option B	Gum
Option C	Fog
Option D	Blood
Correct Option	<b>A</b>

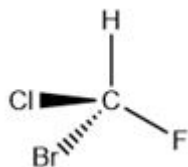
Q. No. 87 0062087	<b>The formation of micelles take place only above</b>
Option A	Critical temperature
Option B	Inversion temperature
Option C	Absolute temperature
Option D	Kraft temperature
Correct Option	<b>D</b>

Q. No. 88 0062088	<b>What is the shape of <math>\text{XeO}_2\text{F}_2</math> ?</b>
Option A	T-shape
Option B	Bend shape
Option C	See-saw
Option D	Tetrahedral
Correct Option	<b>C</b>

Q. No. 89 0062089	<b>What is the Effective Atomic Number (EAN) of <math>[\text{Fe}(\text{CN})_6]^{3-}</math> ?</b>
Option A	36
Option B	35
Option C	54
Option D	50
Correct Option	<b>B</b>

Q. No. 90 0062090	<b><math>[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]</math> what is the IUPAC name of the following compound?</b>
Option A	Diamminedichloridoplatinum(II)
Option B	Diamminedichloridoplatinum(IV)
Option C	Diamminedichloridoplatinum(0)
Option D	Diamminedichloridoplatinum(IV)
Correct Option	<b>A</b>

Q. No. 91 0062091	
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Which of the following statement is correct?

Option A	Chiral molecule with R-Configuration
Option B	Achiral molecule with R-Configuration
Option C	Chiral molecule with S-Configuration
Option D	Achiral molecule with S-Configuration
Correct Option	<b>C</b>

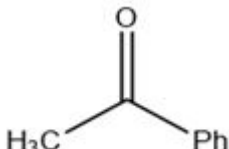
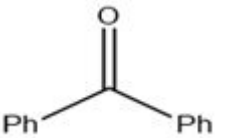
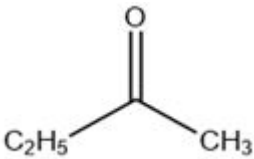
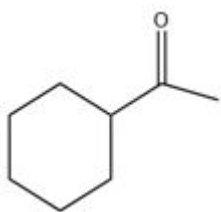
Q. No. 92 0062092	
Option A	
Option B	
Option C	
Option D	
Correct Option	<b>D</b>

Q. No. 93 0062093	Which of the following alcohols will give the most stable carbocation during dehydration?
Option A	2-butanol
Option B	2-methyl-1-butanol
Option C	Butanol
Option D	Methanol
Correct Option	<b>B</b>

Q. No. 94	Which of the following alcohols does not reacts with the Lucas Reagent?
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0062094	
Option A	$\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-OH}$
Option B	$(\text{CH}_3)_2\text{CH-OH}$
Option C	$(\text{CH}_3)_3\text{C-OH}$
Option D	$(\text{CH}_3)_2\text{CH-CH}_2\text{-OH}$
Correct Option	<b>A</b>

Q. No. 95 0062095	<b>Which of the intermediate form in ReimerTiemann reaction?</b>
Option A	Nitrenes
Option B	Carbene
Option C	Ylides
Option D	Carbocation
Correct Option	<b>B</b>

Q. No. 96 0062096	<b>Which of the following does not give positive haloform reaction?</b>
Option A	
Option B	
Option C	
Option D	
Correct Option	<b>B</b>

Q. No. 97 0062097	<b>The S in Buna-S refers to</b>
Option A	Sulphur
Option B	Styrene
Option C	Sodium
Option D	Silicon
Correct Option	<b>B</b>

Q. No. 98 0062098	<b>The two functional group present in typical carbohydrate are</b>
Option A	-CHO & -COOH
Option B	-SO <sub>3</sub> H & -OH
Option C	-OH & -CHO
Option D	-OH & -COOH
Correct Option	<b>C</b>

Q. No. 99 0062099	<b>The class of medicinal products used to treat stress is</b>
Option A	Analgesics
Option B	Tranquillizers
Option C	Antioxidants
Option D	Antihistamines
Correct Option	<b>B</b>

Q. No. 100 0062100	<b>Amides may be converted into amines by a reaction named after</b>
Option A	Hofmann Bromides
Option B	Claisen
Option C	Perkin
Option D	Kekule
Correct Option	<b>A</b>