

Paramedical UG

Q. No. 1 0061001	Strongest forces in nature are
Option A	Nuclear forces
Option B	Electrostatic forces
Option C	Gravitational forces
Option D	Electrostatic forces and Gravitational forces
Correct Option	A

Q. No. 2 0061002	If the resultant of n forces of different magnitudes acting at a point is zero, then the minimum value of n is
Option A	1
Option B	4
Option C	2
Option D	3
Correct Option	D

Q. No. 3 0061003	The spherical shape of rain-drop is due to
Option A	Density
Option B	Pressure
Option C	Viscosity
Option D	Surface tension
Correct Option	D

Q. No. 4 0061004	A spherical equipotential surface is not possible for
Option A	point charge
Option B	dipole
Option C	uniformly charged sphere
Option D	spherical capacitor
Correct Option	B

Q. No. 5 0061005	An ideal gas expands isothermally from a volume V1 to V2 and then compressed to its original volume V1 adiabatically. Initial pressure is P1, final pressure is P3 and the total work done is W, then
Option A	$P_3 > P_1, W = 0$
Option B	$P_3 < P_1, W > 0$
Option C	$P_3 > P_1, W < 0$
Option D	$P_3 < P_1, W = 0$
Correct Option	C

Q. No. 6 0061006	A heater of 220 V heats a certain volume of water to certain temperature in 2 minutes, if the voltage drops to 110 V then the same results will be obtained in
Option A	4 minute
Option B	6 minute

Option C	8 minute
Option D	10 minute
Correct Option	C

Q. No. 7 0061007	During an adiabatic process, the pressure of a gas is found to be proportional to the cube of its absolute temperature. The $\frac{C_p}{C_v}$ for the gas is
Option A	1/2
Option B	2/3
Option C	3/2
Option D	1
Correct Option	C

Q. No. 8 0061008	The true value of angle of dip at a place is 30 degree, the apparent dip in a plane inclined at an angle of 60 degree with magnetic meridian is
Option A	$\text{Tan}^{-1}(2/\sqrt{3})$
Option B	$\text{Tan}^{-1}(2)$
Option C	$\text{Tan}^{-1}(\sqrt{3})$
Option D	$\text{Tan}^{-1}(\sqrt{3}/2)$
Correct Option	A

Q. No. 9 0061009	If a spring is stretched to 0.30 meter, when a mass of 0.60 kg is suspended ($g=10\text{m/s}^2$) then the force constant K will be
Option A	20 N/m
Option B	25 N/m
Option C	18 N/m
Option D	15 N/m
Correct Option	A

Q. No. 10 0061010	The material of permanent magnet has
Option A	High retentivity, High coercivity
Option B	Low retentivity, Low coercivity
Option C	Low retentivity, High coercivity
Option D	High retentivity, Low coercivity
Correct Option	A

Q. No. 11 0061011	Which of the following is most suitable for the core of electromagnets
Option A	Soft iron
Option B	Aluminium
Option C	Copper-nickel alloy
Option D	Tungsten
Correct Option	A

Q. No. 12 0061012	Ultrasonic waves in air produced by a vibrating quartz crystal are
Option A	Transverse waves

Option B	Longitudinal waves
Option C	Transverse and Longitudinal waves
Option D	Electromagnetic waves
Correct Option	B

Q. No. 13 0061013	Current is measured with
Option A	Ammeter
Option B	Voltmeter
Option C	Potentiometer
Option D	Galvanometer
Correct Option	A

Q. No. 14 0061014	In an amplitude modulated wave for audio frequency is 350 cycle/second, then the appropriate carrier frequency will be
Option A	50 cycle/second
Option B	1000 cycle/second
Option C	300 cycle/second
Option D	250 cycle/second
Correct Option	B

Q. No. 15 0061015	In an AC circuit, peak voltage is 416 volts, the value of effective voltage would be
Option A	294 Volt
Option B	300 Volt
Option C	416 Volt
Option D	284 Volt
Correct Option	A

Q. No. 16 0061016	Frequency of AC power in India is
Option A	50 Hz
Option B	60 Hz
Option C	220 Hz
Option D	240 Hz
Correct Option	A

Q. No. 17 0061017	Detection of gamma rays can be done by
Option A	Ionization chamber
Option B	Eye
Option C	Barometer
Option D	Thermometer
Correct Option	A

Q. No. 18 0061018	Microwave is produced from
Option A	Vibration of atom
Option B	Radioactive decay

Option C	Magnetron
Option D	X-ray tube
Correct Option	C

Q. No. 19 0061019	An object is placed at 5 cm in front of a concave mirror of radius of curvature 15 cm. The magnification of the image will be
Option A	3
Option B	-3
Option C	6
Option D	-6
Correct Option	A

Q. No. 20 0061020	Critical angle of Crown glass with respect to air is
Option A	41.14 degree
Option B	48.75 degree
Option C	24.56 degree
Option D	37.31 degree
Correct Option	A

Q. No. 21 0061021	If refractive index of a glass is 4 then the speed of light in glass will be
Option A	7.5×10^7 m/s
Option B	7.5×10^8 m/s
Option C	0.075×10^8 m/s
Option D	0.75×10^7 m/s
Correct Option	A

Q. No. 22 0061022	The portion of the wavefront of light from a distant star intercepted by the Earth is
Option A	Elliptical wavefront
Option B	Square wavefront
Option C	Plane wavefront
Option D	Spherical wavefront
Correct Option	C

Q. No. 23 0061023	The minimum energy needed by an electron to come out from a metal surface is called
Option A	Work function of the metal
Option B	Total Energy of the metal
Option C	Kinetic energy of the metal
Option D	Potential energy of the metal
Correct Option	A

Q. No. 24 0061024	Photoelectric effect involves conversion of light energy to
Option A	Electrical energy
Option B	Chemical energy

Option C	Heat energy
Option D	Wave energy
Correct Option	A

Q. No. 25 0061025	Nucleus has
Option A	Protons and electrons
Option B	Electrons
Option C	Protons and neutrons
Option D	Only neutrons
Correct Option	C

Q. No. 26 0061026	The energy required to remove an electron in a hydrogen atom from n=3 state is
Option A	13.6 eV
Option B	1.36 eV
Option C	1.51 eV
Option D	0.151 eV
Correct Option	C

Q. No. 27 0061027	Calculate the energy equivalent of 2 g of substance
Option A	9×10^{13} J
Option B	18×10^{13} J
Option C	36×10^{13} J
Option D	27×10^{13} J
Correct Option	B

Q. No. 28 0061028	5 Ci is equal to how much becquerel
Option A	18.5×10^{10} Bq
Option B	2.7×10^{11} Bq
Option C	2.7×10^{-10} Bq
Option D	18.5×10^{-10} Bq
Correct Option	A

Q. No. 29 0061029	In n-type semiconductor
Option A	Number of hole greater than number of electron
Option B	Number of electron greater than number of hole
Option C	Number of hole equal to number of electron
Option D	Only holes are present.
Correct Option	B

Q. No. 30 0061030	Energy gap between valence and conduction band in insulator is
Option A	More than 3 eV
Option B	less than 0.2 eV

Option C	Between 0.2 to 3 eV
Option D	Zero
Correct Option	A

Q. No. 31 0061031	If an amplitude modulated wave has maximum amplitude of 8V and minimum amplitude of 4V then modulation index μ will be
Option A	1/2
Option B	2
Option C	1/3
Option D	3
Correct Option	C

Q. No. 32 0061032	A closed pipe and an open pipe have their first overtones identical in frequency. Their lengths are in the ratio of
Option A	1:5
Option B	2:1
Option C	1:3
Option D	3:4
Correct Option	D

Q. No. 33 0061033	A bulb and a capacitor are connected in series to a source of alternating current. If its frequency is increased, while keeping the voltage of the source constant, then bulb will give
Option A	same intense light
Option B	less intense light
Option C	more intense light
Option D	stop emitting light
Correct Option	C

Q. No. 34 0061034	On an average, a Camel heart was found to beat 60 times in a minute, its time period will be
Option A	1 s
Option B	2 s
Option C	0.8 s
Option D	0.001 s
Correct Option	A

Q. No. 35 0061035	A vertical wire carries a current upwards. The magnetic field at a point due north of the wire is directed
Option A	Upward
Option B	Due west
Option C	Due south
Option D	Due east
Correct Option	B

Q. No. 36 0061036	A metal wire of length L and area of cross-section A is fixed between rigid supports of negligible tension. If this is cooled, then
Option A	Length increase and tension decrease
Option B	Length decrease and tension increase

Option C	Length decrease and tension decrease
Option D	Tension increase and length increase
Correct Option	B

Q. No. 37 0061037	The magnetic moment of atomic neon is
Option A	2
Option B	zero
Option C	1
Option D	3
Correct Option	B

Q. No. 38 0061038	A gas expands from 1 litre to 5 litres at one atmospheric pressure. The work done by the gas is nearly
Option A	400 Nm
Option B	100 Nm
Option C	50 Nm
Option D	10 Nm
Correct Option	A

Q. No. 39 0061039	The average degree of freedom per molecule for a gas is 5. The gas performs 30 J of work when it expands at constant pressure. The heat absorbed by the gas is
Option A	110 J
Option B	30 J
Option C	210 J
Option D	105 J
Correct Option	D

Q. No. 40 0061040	Peltier co-efficient of a thermo couple is 2 nano volts. If 5 amp current flows for 1 minute then heat developed at a junction would be
Option A	6 erg
Option B	3 erg
Option C	10 erg
Option D	30 erg
Correct Option	A

Q. No. 41 0061041	In cold countries during winter, water pipes sometimes burst because
Option A	water freezes and it takes heat from pipes
Option B	water freezes and pressure increases
Option C	water expands on freezing
Option D	water pipes expands on cooling
Correct Option	C

Q. No. 42 0061042	A house has 220 V power supply and it is protected by a 4 ampere fuse. The maximum number of 40 W lamps in parallel that can be turned on will be
Option A	22
Option B	40
Option C	88

Option D	160
Correct Option	A

Q. No. 43 0061043	Coatings material on raincoat makes it waterproof by increasing the
Option A	Cohesive force
Option B	Water absorption
Option C	surface tension
Option D	Angle of contact
Correct Option	A

Q. No. 44 0061044	The time period of a simple pendulum on a freely moving artificial satellite is
Option A	Infinite
Option B	10 sec
Option C	0
Option D	5 sec
Correct Option	A

Q. No. 45 0061045	A long string with a charge of λ per unit length passes through an imaginary cube of edge a. The maximum flux of the electric field through the cube will be
Option A	$\sqrt{3}\lambda a/\epsilon_0$
Option B	$\sqrt{2}\lambda a/\epsilon_0$
Option C	$\lambda a/\epsilon_0$
Option D	$\lambda a\epsilon_0$
Correct Option	A

Q. No. 46 0061046	A half ring of radius R has a charge of λ per unit length. The potential at the centre of the half ring is
Option A	$k\lambda R$
Option B	$k\pi\lambda^2$
Option C	$k\pi\lambda$
Option D	$k\pi\lambda R$
Correct Option	C

Q. No. 47 0061047	In the three states of matter, the elastic coefficient can be
Option A	Bulk modulus
Option B	Poisson ratio
Option C	Young modulus
Option D	Coefficient of volume elasticity
Correct Option	D

Q. No. 48 0061048	If the temperature increases, the modulus of elasticity
Option A	First increases & then decreases

Option B	Increases
Option C	Unchanged
Option D	Decreases
Correct Option	D

Q. No. 49 0061049	A cyclist turns around a curve at 15 miles/hour. If he turns at triple the speed, the tendency to overturn is
Option A	16 times
Option B	2 times
Option C	4 Time
Option D	9 time
Correct Option	D

Q. No. 50 0061050	A Cyclist going round in a circular track at constant speed has
Option A	Constant acceleration
Option B	Constant angular velocity
Option C	Constant force
Option D	Constant velocity
Correct Option	B

Q. No. 51 0071001	When ethyl iodide and propyl iodide react with sodium in the presence of ether then they form
Option A	Only one alkane
Option B	Two alkane
Option C	Three alkane
Option D	Five alkane
Correct Option	C

Q. No. 52 0071002	Bauxite contain impurities of iron oxide is purified by
Option A	Hoop process
Option B	Serpeck process
Option C	Bayer process
Option D	Electrolytic process
Correct Option	C

Q. No. 53 0071003	Normality of 0.2 M Phosphorous acid is
Option A	0.3
Option B	0.5
Option C	0.4
Option D	0.6
Correct Option	C

Q. No. 54 0071004	Frequency of Limiting line in Balmer Series
Option A	3.22×10^{15} Hz
Option B	

	7.29×10^{14} Hz
Option C	8.22×10^{14} Hz
Option D	5.29×10^{14} Hz
Correct Option	C

Q. No. 55 0071005	An organic compound contains C = 36, H = 6 and rest oxygen. Its Empirical formula is
Option A	C ₃ H ₂ O ₂
Option B	C ₂ H ₂ O ₂
Option C	CH ₂ O ₂
Option D	CH ₂ O
Correct Option	D

Q. No. 56 0071006	In which Group all the physical states (Solid, Liquid Gas) observed
Option A	Group 13
Option B	Group 15
Option C	Group 17
Option D	Group 14
Correct Option	C

Q. No. 57 0071007	Why ionization Potential of Nitrogen is greater than oxygen
Option A	Ionization potential increases with decrease in size
Option B	Nitrogen poses stable half-filled p-orbital
Option C	Screening effect in nitrogen greater than oxygen
Option D	Oxygen is more electropositive than nitrogen
Correct Option	B

Q. No. 58 0071008	Which of the following oxide of nitrogen is not a common air pollutant?
Option A	NO ₂
Option B	N ₂ O ₅
Option C	NO
Option D	N ₂ O
Correct Option	B

Q. No. 59 0071009	An exothermic reaction is a chemical reaction in which
Option A	heat is released
Option B	heat is absorbed
Option C	Coolant is produced
Option D	nothing happens
Correct Option	A

Q. No. 60 0071010	Root Mean Square(RMS) Velocity of an ideal gas at constant pressure varies with density relates as
Option A	d

Option B	$d^{1/2}$
Option C	d^2
Option D	$d^{-1/2}$
Correct Option	D

Q. No. 61 0071011	Frenkel defect is happened in the lattice crystal due to
Option A	An extra positive ion occupying an interstitial position in the lattice crystal
Option B	An extra negative ion occupying an interstitial position in the lattice crystal
Option C	The shift of a positive ion from its normal lattice site Creating a vacancy and occupy an interstitial site
Option D	An ion or atom missing from the normal lattice site creating a vacancy
Correct Option	C

Q. No. 62 0071012	What is work done, when Fe(s) is dissolved in aqueous HCl in a closed vessel
Option A	Zero
Option B	Negative
Option C	Positive
Option D	Infinity
Correct Option	A

Q. No. 63 0071013	The value of gas constant R is:
Option A	$8.3 \text{ J mol}^{-1} \text{ K}^{-1}$
Option B	0.082 litre atm
Option C	$83 \text{ erg K}^{-1} \text{ mol}^{-1}$
Option D	$0.987 \text{ cal mol}^{-1} \text{ K}^{-1}$
Correct Option	A

Q. No. 64 0071014	pH of 0.1M solution of weak acid is 2. The value of ionization constant K_a of acid is
Option A	1×10^{-3}
Option B	1×10^{-4}
Option C	1×10^{-5}
Option D	1×10^{-6}
Correct Option	C

Q. No. 65 0071015	Osmotic pressure is 0.0821 atm at temperature of 300K. Find concentration in mole/litre
Option A	0.33×10^{-2}
Option B	0.33×10^{-3}
Option C	0.33×10^{-4}
Option D	0.33×10^{-5}
Correct Option	A

Q. No. 66 0071016	What is the Molecular formula of sodium chromate(VI)
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Option A	Na_2CrO_4
Option B	$\text{Na}_3\text{Cr}_4\text{O}_4$
Option C	Na_2CrO_2
Option D	$\text{Na}_2\text{Cr}_2\text{O}_4$
Correct Option	A

Q. No. 67 0071017	What is the oxidation number of iodine in CsI_3, ICl_3
Option A	-3, -1
Option B	-1/3, +3
Option C	+3, -1/2
Option D	-1/3, +2
Correct Option	B

Q. No. 68 0071018	Method used for removal of temporary and permanent hardness of water
Option A	Decantation
Option B	Distillation
Option C	Boiling
Option D	Filtration
Correct Option	B

Q. No. 69 0071019	A zero order reaction is one whose rate is independent of
Option A	Temperature
Option B	Reaction vessel volume
Option C	Pressure of light
Option D	Concentration of reactants
Correct Option	D

Q. No. 70 0071020	Compound insoluble in acetic acid is
Option A	Calcium oxide
Option B	Calcium carbonate
Option C	Calcium oxalate
Option D	Calcium hydroxide
Correct Option	C

Q. No. 71 0071021	A catalyst is a substance which
Option A	Increases the equilibrium concentration of the product
Option B	Supplies energy to the reaction
Option C	Alter the rate of reaction and Changes the equilibrium constant of the reaction
Option D	Shortens the time to reach equilibrium
Correct Option	C

Q. No. 72 0071022	In diborane the two H-B-H angles are
Option A	85° , 120°

Option B	95 ⁰ , 120 ⁰
Option C	75 ⁰ , 110 ⁰
Option D	65 ⁰ , 120 ⁰
Correct Option	B

Q. No. 73 0071023	Aluminium has a great affinity for oxygen and its oxidation is an exothermic process. This fact is used for
Option A	Preparing thin foils of aluminium
Option B	Making of utensils
Option C	Preparing of duraaluminium alloy
Option D	Thermite welding
Correct Option	D

Q. No. 74 0071024	Law of Reciprocal proportion was given by
Option A	Jeremias Richter
Option B	Proust
Option C	Gay Lussac
Option D	Dalton
Correct Option	A

Q. No. 75 0071025	When the temperature is increased, surface tension of water:
Option A	Increases
Option B	Shows irregular behaviour
Option C	Remains constant
Option D	Decreases
Correct Option	D

Q. No. 76 0071026	Carbon atoms in C₂(CN)₄ are:
Option A	Sp hybridised
Option B	Sp and Sp ² hybridised
Option C	Sp ² hybridised
Option D	Sp, Sp ² and Sp ³ hybridised
Correct Option	B

Q. No. 77 0071027	What is the molecular Geometry of ClF₃
Option A	T-Shape
Option B	Octahedral
Option C	Trigonal Planar
Option D	Trigonal Bipyramid
Correct Option	A

Q. No. 78 0071028	Insulin contains 2.8% sulphur. The minimum molecular weight of insulin is
Option A	1142.85

Option B	942.44
Option C	2800
Option D	3200
Correct Option	A

Q. No. 79 0071029	The kinetic energy of 8.0 moles of N₂ gas at 127° C is (R=2 calmole⁻¹K⁻¹)
Option A	9600 cal
Option B	4800 cal
Option C	1400 cal
Option D	1700 cal
Correct Option	A

Q. No. 80 0071030	Which of the following industry waste of phenolic compounds and suspended solids?
Option A	Sugar
Option B	Petroleum
Option C	Paper
Option D	Detergent
Correct Option	B

Q. No. 81 0071031	Which of the following crystal has no rotation of symmetry?
Option A	Triclinic
Option B	Hexagonal
Option C	Orthorhombic
Option D	Cubic
Correct Option	A

Q. No. 82 0071032	The aqueous solution of HCOO Na, KCN and C₆H₅NH₃Cl are
Option A	Basic, basic and acidic
Option B	Acidic, basic and neutral
Option C	basic, basic and neutral
Option D	neutral, basic and neutral
Correct Option	A

Q. No. 83 0071033	Heavy water freezes at which temperature
Option A	18° C
Option B	3.8° C
Option C	38° C
Option D	10° C
Correct Option	B

Q. No. 84 0071034	Why gypsum is added to cement
Option A	Setting time of cement become less

Option B	Setting time of cement increases
Option C	Cement colour change
Option D	Shining surface is obtained
Correct Option	B

Q. No. 85 0071035	Which of the following is a highly corrosive salt
Option A	FeCl ₂
Option B	Hg ₂ Cl ₂
Option C	PbCl ₂
Option D	HgCl ₂
Correct Option	D

Q. No. 86 0071036	The atomic weight of Al is 27. When a current of 3 Faradays is passed through a solution of Al⁺⁺⁺ ions, the weight of Al deposited is
Option A	27
Option B	45
Option C	36
Option D	18
Correct Option	A

Q. No. 87 0071037	Which oxide of nitrogen is isoelectronic with CO₂?
Option A	NO ₂
Option B	NO
Option C	N ₂ O
Option D	N ₂ O ₂
Correct Option	C

Q. No. 88 0071038	Heating of pyrites in air for oxidation of sulphur is called
Option A	Calcination
Option B	Smelting
Option C	Slagging
Option D	Roasting
Correct Option	D

Q. No. 89 0071039	Colloidal solution of arsenious sulphide can be prepared by
Option A	Double decomposition
Option B	Electrodispersion method
Option C	Peptization
Option D	Hydrolysis
Correct Option	A

Q. No. 90 0071040	Diaspore and corundum are ores of
Option A	Al and Si
Option B	Al and Fe

Option C	Fe and Si
Option D	Al
Correct Option	D

Q. No. 91 0071041	During electrolysis graphite is used as an electrode and not diamond because
Option A	Graphite is cheaper
Option B	Graphite is soft
Option C	Graphite is non reactive
Option D	Diamond does not posses free electrons while graphite posses free electrons
Correct Option	D

Q. No. 92 0071042	Laughing gas is prepared by heating
Option A	NH_4NO_3
Option B	$(\text{NH}_4)_2\text{SO}_4$
Option C	$\text{NH}_4\text{Cl} + \text{NaNO}_4$
Option D	NH_4Cl
Correct Option	A

Q. No. 93 0071043	When plants and animals decay, the organic Nitrogen is converted into inorganic Nitrogen. The inorganic Nitrogen is the form of
Option A	Ammonia
Option B	Element of N
Option C	Nitrates
Option D	Nitrides
Correct Option	A

Q. No. 94 0071044	Catalyst used in the Haber process for the manufacture of NH_3
Option A	Fe + Mo
Option B	Al_2O_3
Option C	CuO
Option D	Pt
Correct Option	A

Q. No. 95 0071045	Electronic configuration of Cr is
Option A	$[\text{Ar}] 3d^4 4s^1$
Option B	$[\text{Ar}] 3d^5 4s^2$
Option C	$[\text{Ar}] 3d^5 4s^1$
Option D	$[\text{Ar}] 3d^5 3s^1$
Correct Option	C

Q. No. 96 0071046	Which of the following does not considered as transition element
Option A	Cd
Option B	Pd

Option C	Mo
Option D	Tc
Correct Option	A

Q. No. 97 0071047	Molten NaCl conducts electricity due to presence of
Option A	Free molecules
Option B	Free electrons
Option C	Free ions
Option D	Atoms
Correct Option	C

Q. No. 98 0071048	When manganese dioxide is fused with KOH in presence of oxidizing agent like KNO_3 _____ will be obtained
Option A	K_2MnO_4
Option B	KMnO_4
Option C	Mn_2O_3
Option D	Mn_4O_3
Correct Option	A

Q. No. 99 0071049	IUPAC name of $[\text{Ni}(\text{NH}_3)_4][\text{NiCl}_4]$
Option A	Tetraammine nickel(II) - Tetrachloro nickelate(II)
Option B	Tetraammine nickelate(II) - Tetrachlorido nickel(II)
Option C	Tetrachlorido nickel(II) - Tetraammine nickel(II)
Option D	Tetrachlorido nickelate(II) - Tetraammine nickelate(II)
Correct Option	A

Q. No. 100 0071050	The number of unidentate ligands in the complex ion is called
Option A	Oxidation number
Option B	Coordination number
Option C	EAN
Option D	Primary valency
Correct Option	B