RUHS

RUHS Entrance Examination 2023 Question Paper

Paramedical 2023

Q. No. 1 0052001	**If the work done W is represented by kW=M, where M is the mass, the dimensional formula of k is -**
Option A	$[M^0L^{-1}T^2]$
Option B	$[M^0L^{-2}T^2]$
Option C	$[M^0L^{-2}\ T^{-2}]$
Option D	$[M^0L^2\ T^{-2}]$
Correct Option	**B**

Q. No. 2 0052002	**: If $p=y^2$, then the relative error in p is -**
Option A	$\frac{\Delta y}{y}$
Option B	$(\Delta y)^2$
Option C	$\frac{(\Delta y)^2}{y}$
Option D	$\frac{2\Delta y}{y}$
Correct Option	**D**

Q. No. 3 0052003	**One body is dropped, while a second body is thrown downward with an initial velocity of $1ms^{-1}$ simultaneously. The separation between these is 18 m after a time-**
Option A	18 sec
Option B	9 sec
Option C	4.5 sec
Option D	36 sec
Correct Option	**A**

Q. No. 4 0052004	**An athlete completes one round of a circular track of radius R in 40 sec. What will be his displacement at the end of 2 min. 20 sec.**
Option A	zero
Option B	2R
Option C	$2\pi R$
Option D	$7\pi R$
Correct Option	**B**

Q. No. 5 0052005	**A body is projected at an angle of projection 35^0. To get the same range with the same velocity of projection, the body can also be fired at an angle -**
Option A	55^0
Option B	80^0
Option C	75^0
Option D	65^0
Correct Option	**A**

Q. No. 6 0052006	**A river is flowing from west to east at a speed of 5 metre per minute. A man standing on south bank of river is capable of swimming at 10 metre per minute in still water. If he wants to swim across the river in shortest time, he should swim in a direction-**
Option A	Due north
Option B	At an angle of 30^0 west of north
Option C	At an angle of 30^0 east of north
Option D	At an angle of 60^0 west of north
Correct Option	**A**

Q. No. 7 0052007	**A bullet of mass 20 g is fired by a gun of mass 20 kg. If the muzzle speed of the bullet is 150 ms^{-1}, the recoil speed of the gun will be-**
Option A	1.50 ms^{-1}
Option B	1.5 ms^{-1}
Option C	0.15 ms^{-1}
Option D	.015 ms^{-1}
Correct Option	**C**

Q. No. 8 0052008	**In a circus, the diameter of globe of death is 30 m. The minimum height at which a cyclist must start in order to roll down the inclined and go round the globe successfully is -**
Option A	3.75 m
Option B	37.5 m
Option C	475 m
Option D	35.7 m
Correct Option	**B**

Q. No. 9 0052009	**With a vertical speed of 10 ms-1, the angle of banking for a radius of curvature 10 m (where g=10 ms^{-2}) is-**
Option A	30^0
Option B	60^0
Option C	85^0
Option D	45^0
Correct Option	**D**

Q. No. 10 0052010	**The momentum of a body is increased by 26%. The K.E. is increased by about -**
Option A	38.56%
Option B	58.76%
Option C	25%
Option D	5%
Correct Option	**B**

Q. No. 11 0052011	**A body is moving unidirectionally under the influence of a source of constant power. Its displacement in time 't' is proportional to -**
Option A	$t^{3/2}$
Option B	$t^{2/3}$
Option C	t^{2}
Option D	$t^{1/2}$
Correct Option	**A**

Q. No. 12 0052012	**The work done by a centripetal force F when the body completes one rotation around the circle of radius R is**
Option A	RF
Option B	2RF
Option C	$2\pi RF$
Option D	zero
Correct Option	**D**

Q. No. 13 0052013	**Two circular discs have masses in the ratio 1:2 and diameter in the ratio 2:1. The ratio of their moment of inertia is -**
Option A	8
Option B	4
Option C	2
Option D	1
Correct Option	**C**

Q. No. 14 0052014	**If a gymnast sitting on a rotational stool with his/her arms stretched suddenly lower his hands, then**
Option A	His angular velocity decreases
Option B	His moment of inertia decreases
Option C	His angular velocity remains constant
Option D	His angular momentum increases
Correct Option	**B**

Q. No. 15 0052015	**If gravitational force varies inversely as the p^{th} power of the distance. Then the time period of a planet in circular orbit of radius R around the sun will be proportional to -**

Option A	$R^{(p-1)/2}$
Option B	$R^{(p+2)/2}$
Option C	$R^{(p+1)/2}$
Option D	$R^{(p-2)/2}$
Correct Option	**C**

Q. No. 16 0052016	**A satellite is orbiting just above the surface of a planet having average density ρ and period T. If G is the universal gravitational constant, the quantity $T^2\rho$ is equal to-**
Option A	$3\pi/G$
Option B	$1/G$
Option C	$3\pi G$
Option D	$4\pi/G$
Correct Option	**A**

Q. No. 17 0052017	**A satellite orbits around the earth in a circular orbit with a speed v and orbital radius r. If it loses some energy, then v and r change as -**
Option A	speed v decreases and radius r increases
Option B	Both v and r decrease
Option C	speed v increases and radius r decreases
Option D	Both v and r increase
Correct Option	**C**

Q. No. 18 0052018	**The air of the atmosphere becomes cold at higher altitudes, because of-**
Option A	Decrease in density
Option B	Variation in pressure
Option C	Expansion of air
Option D	Height above the surface of earth
Correct Option	**B**

Q. No. 19 0052019	**If the r.m.s. speed of a certain diatomic gas at room temperature is found to be 1920 ms^{-1}, the gas will be -**
Option A	H_2
Option B	F_2
Option C	O_2
Option D	Cl_2
Correct Option	**A**

Q. No. 20 0052020	**The efficiency of Carnot engine working between 800 K and 500 K is -**
Option A	0.4
Option B	0.5
Option C	0.375
Option D	0.625
Correct Option	**C**

Q. No. 21 0052021	**Submarines are based on -**
Option A	Pascal law
Option B	Archimedes' principle
Option C	Bernoulli's principle
Option D	Stoke's law
Correct Option	**B**

Q. No. 22 0052022	**A sound is said to be of rich quality, when it -**
Option A	contains a note of high frequency
Option B	contains a note of high amplitude
Option C	does not contain overtones
Option D	contains overtones
Correct Option	**D**

Q. No. 23 0052023	**The total energy of a particle executing S. H. M. is proportional to -**
Option A	Displacement from equilibrium position
Option B	Frequency of oscillation
Option C	Velocity in equilibrium position
Option D	Square of amplitude of motion
Correct Option	**D**

Q. No. 24 0052024	**A boat having length 3m and breadth 2 m is floating on a lake. The boat sinks by 1 cm when a man gets on it. The mass of the man is -**
Option A	60 kg
Option B	72 kg
Option C	128 kg
Option D	92 kg
Correct Option	**A**

Q. No. 25 0052025	**The fundamental notes produced in an open end pipe and a closed end pipe of the same length are in the ratio -**
Option A	1:2
Option B	2:1

Option C	1:1
Option D	4:3
Correct Option	**A**

Q. No. 26 0052026	**A charge Q' is placed at the centre of the line joining two exactly equal positive charges Q each. The system of three charges will be in equilibrium if Q' is equal to -**
Option A	$-Q$
Option B	$-\frac{Q}{4}$
Option C	$+Q$
Option D	$+\frac{Q}{2}$
Correct Option	**B**

Q. No. 27 0052027	**A parallel plate air capacitor has a capacitance of 5 μF. On introducing a conducting slab of thickness equal to one fourth of the distance between the plates, the increase in capacity will be-**
Option A	$1.56\ \mu F$
Option B	$0.167\ \mu F$
Option C	$1.67\ \mu F$
Option D	$1.76\ \mu F$
Correct Option	**C**

Q. No. 28 0052028	**An electron of mass m_e initially at rest moves through a certain distance in a uniform electric field in time t_1. A proton of mass m_p also initially at rest takes time t_2 to move through an equal distance in this uniform electric field. Neglecting the effect of gravity, the ratio $\frac{t_2}{t_1}$ is nearly equal to -**
Option A	1
Option B	1836
Option C	$\sqrt{\frac{m_e}{m_p}}$
Option D	$\sqrt{\frac{m_p}{m_e}}$
Correct Option	**D**

Q. No. 29 0052029	**The masses of three wires of copper are in the ratio 5:3:1 and their lengths are in the ratio 1:3:5. The ratio of their electrical resistance is-**
Option A	1:3:5
Option B	5:3:1

Option C	1:15:125
Option D	125:15:1
Correct Option	**C**

Q. No. 30 0052030	**Eleven equal wires each of resistance 4Ω are joined to form an incomplete cube. The total resistance between one end of vacant edge to the other end is-**
Option A	28/5Ω
Option B	7/3Ω
Option C	10/3Ω
Option D	5/3Ω
Correct Option	**A**

Q. No. 31 0052031	**If the resistivity of an alloy is ρ_a and that of constituent metals is ρ_m, then-**
Option A	there is no relation between ρ_a and ρ_m
Option B	$\rho_a = \rho_m$
Option C	$\rho_a < \rho_m$
Option D	$\rho_a > \rho_m$
Correct Option	**D**

Q. No. 32 0052032	**If a particle is moving in a uniform magnetic field, then-**
Option A	total energy and momentum remain constant
Option B	both total energy and momentum change
Option C	total energy remains constant and momentum changes
Option D	total energy changes and momentum remains constant
Correct Option	**C**

Q. No. 33 0052033	**In a map depicting the magnetic field lines at Melbourne in Australia, field lines will appear to -**
Option A	go into the ground
Option B	come out of the ground
Option C	no lines at all
Option D	intersect each other
Correct Option	**B**

Q. No. 34 0052034	**The magnetic moment associated with a circular coil with 50 turns, carrying current of 12 A and of radius 20 cm is-**
Option A	75.4 Am^2
Option B	7.54 Am^2
Option C	74.5 Am^2

Option D	zero
Correct Option	**A**

Q. No. 35 0052035	**A bar magnet is dropped through a copper ring, then the acceleration 'a' of the magnet is-**
Option A	a=g
Option B	a < g
Option C	a > g
Option D	depends on the diameter of the ring
Correct Option	**B**

Q. No. 36 0052036	**A In a series LR circuit, X_L=3R. If a capacitor is added to it in series with X_C=R, the ratio of new to old power factor is**
Option A	1
Option B	2
Option C	$1/\sqrt{2}$
Option D	$\sqrt{2}$
Correct Option	**D**

Q. No. 37 0052037	**The area to be covered for T.V. telecast is quadrupled, then the height of transmitting antenna (T.V. tower) will have to be**
Option A	halved
Option B	doubled
Option C	quadrupled
Option D	kept unchanged
Correct Option	**C**

Q. No. 38 0052038	**The phase difference between input signal voltage and output voltage in a common base amplifier is-**
Option A	zero
Option B	180^0
Option C	45^0
Option D	90^0
Correct Option	**A**

Q. No. 39 0052039	**The binary subtraction of $(10101)_2$ from $(111001)_2$ is-**
Option A	$(101100)_2$
Option B	$(110100)_2$
Option C	$(100100)_2$
Option D	$(100110)_2$
Correct Option	**C**

Q. No. 40 0052040	**In a transistor, the collector and emitter current resistances are 100 kΩ and 100 Ω respectively. For equal values of emitter and collector currents, the power gain will be- -**
Option A	100
Option B	1000
Option C	10000
Option D	100000
Correct Option	**B**

Q. No. 41 0052041	**In the fission of single nucleus of U_{92}^{235}, 200 MeV energy is released. To produce a power of one kilowatt, the number of fissions per second will be-**
Option A	3.12×10^{12}
Option B	3.12×10^{14}
Option C	3.12×10^{15}
Option D	3.12×10^{13}
Correct Option	**D**

Q. No. 42 0052042	**If the activity of a radioactive material drops to 1/16th of its initial value in 30 years, then its half life is-**
Option A	7.5 years
Option B	75 years
Option C	45 years
Option D	65 years
Correct Option	**A**

Q. No. 43 0052043	**The energy 'E' of a photon of wavelength λ_1, is equal to the K.E. of a proton. If λ_2 is the de-Broglie wavelength of proton, then the ratio λ_1/λ_2 is-**
Option A	$E^{1/2}$
Option B	$E^{-1/2}$
Option C	E^{-1}
Option D	E^{0}
Correct Option	**B**

Q. No. 44 0052044	**The fastest electron (with exciting wavelength λ) in a photoemissive cell has speed v. On changing the exciting wavelength to 3λ/4, the speed of fastest electron becomes -**
Option A	$= v\sqrt{\frac{3}{4}}$
Option B	$= v\sqrt{\frac{4}{3}}$

Option C	$< v\sqrt{\frac{4}{3}}$
Option D	$> v\sqrt{\frac{4}{3}}$
Correct Option	**D**

Q. No. 45 0052045	**If the diameter of the aperture of a camera objective is reduced to half, then the exposure time under identical conditions of light should be made -**
Option A	4 fold
Option B	2 fold
Option C	$\sqrt{2}$ fold
Option D	$2\sqrt{2}$ fold
Correct Option	**A**

Q. No. 46 0052046	**An astronaut having pupil's diameter 6 mm, is looking down on earth's surface from a space shuttle at an altitude of 600 km. If the wavelength of visible light is 600 nm, he will be able to resolve linear objects of the size about -**
Option A	0.6 m
Option B	50 m
Option C	60 m
Option D	6 m
Correct Option	**C**

Q. No. 47 0052047	**A slit of width 'a' is illuminated by white light. The first minimum for red light (λ =6500 A^o) will fall at an angle 30^o when slit width 'a' will be-**
Option A	2.3 micron
Option B	1.3 micron
Option C	13 micron
Option D	3250 A^o
Correct Option	**B**

Q. No. 48 0052048	**The angle of minimum deviation of a prism of refractive index $\sqrt{3}$ will be-**
Option A	75^o
Option B	45^o
Option C	30^o
Option D	60^o
Correct Option	**D**

Q. No. 49 0052049	**A magnifying glass is to be used from the fixed object at a distance of 1 inch. If it is to produce an erect image magnified 5 times, its focal length should be-**
Option A	12.5 inch

Option B	1.25 inch
Option C	1.55 inch
Option D	1.65 inch
Correct Option	**B**

Q. No. 50 0052050	**The inverse square law of intensity is valid for-**
Option A	Spherical wave front
Option B	Cylindrical wave front
Option C	Plane wave front
Option D	Conical wave front
Correct Option	**A**

Q. No. 51 0082051	**The mass of sodium acetate (CH_3COONa) required to make 500mL of 0.375M aqueous solution is (Given that the molar mass of sodium acetate (CH_3COONa) is 82.0245).**
Option A	10.38 g
Option B	13.38 g
Option C	15.38 g
Option D	17.48 g
Correct Option	**C**

Q. No. 52 0082052	**How many moles of lead(II) chloride will be formed from a reaction of between 6.5 g of PbO and 3.2 g of HCl?**
Option A	0.339
Option B	0.029
Option C	0.044
Option D	0.011
Correct Option	**B**

Q. No. 53 0082053	**Which of the following ions has electronic configuration [Ar] $3d^6$?**
Option A	Mn^{3+}
Option B	Fe^{3+}
Option C	Co^{3+}
Option D	Ni^{3+}
Correct Option	**C**

Q. No. 54 0082054	**The number of p electrons in Bromine atom are?**
Option A	13
Option B	15
Option C	16
Option D	17

Correct Option	**D**

Q. No. 55 0082055	**The correct order of decreasing ionic radii among the following isoelectronic species is--**
Option A	$Cl^- > S^{2-} > Ca^{2+} > K^+$
Option B	$S^{2-} > Cl^- > K^+ > Ca^{2+}$
Option C	$S^{2-} > Cl^{- -} > Ca^{2+} > K^+$
Option D	$K^+ > Ca^{2+} > Cl^- > S^{2-}$
Correct Option	**B**

Q. No. 56 0082056	**In XeF_2, XeF_4 and XeF_6, the number of lone pairs of electrons at Xe are respectively..**
Option A	1, 2, 3
Option B	4, 2, 1
Option C	2, 3, 1
Option D	3, 2, 1
Correct Option	**D**

Q. No. 57 0082057	**Which of the following have bond order 2.5 ?** **(i) O_2** **(ii) N_2^{2-}** **(iii) N_2^+** **(iv) O_2^+**
Option A	(i) & (ii)
Option B	(ii) & (iii)
Option C	(i) & (iv)
Option D	(iii) & (iv)
Correct Option	**D**

Q. No. 58 0082058	**The state of hybridisation of oxygen in OF_2 is**
Option A	sp
Option B	sp^2
Option C	sp^3
Option D	dsp^2
Correct Option	**C**

Q. No. 59 0082059	**The average velocity, rms velocity and the most probable velocity of gas molecules at STP increase in the order----**
Option A	average velocity < rms velocity < most probable velocity
Option B	average velocity < most probable velocity < rms velocity
Option C	rms velocity < most probable velocity < average velocity
Option D	most probable velocity < average velocity < rms velocity

Correct Option	**D**

Q. No. 60 0082060	**Which of the following can be most easily liquefied?**
Option A	CO_2
Option B	Cl_2
Option C	SO_2
Option D	CH_4
Correct Option	**C**

Q. No. 61 0082061	**If the enthalpy of combustion of dihydrogen, methane and graphite at 298K are -285.8 kJ mol^{-1}, -890.3 kJ mol^{-1} and -393.5 kJ mol^{-1} respectively, then the enthalpy of formation of CH_4 gas will be?**
Option A	-52.27 kJ mol^{-1}
Option B	+ 52.26 kJ mol^{-1}
Option C	-74.8 kJ mol^{-1}
Option D	+74.8 kJ mol^{-1}
Correct Option	**C**

Q. No. 62 0082062	**The bond enthalpy of an O-H bond is 109 kcal mol^{-1} .When I mole of water is formed, then--**
Option A	218 kcal is released
Option B	109 kcal is absorbed
Option C	109 kcal is released
Option D	218 kcal is absorbed
Correct Option	**A**

Q. No. 63 0082063	**The concentration of hydrogen ions in a sample of soft drink is $3.8x10^{-3}$M. What will be its pH?**
Option A	1.42
Option B	2.42
Option C	3.42
Option D	1.82
Correct Option	**B**

Q. No. 64 0082064	**Which salt upon hydrolysis will give basic solution?**
Option A	NH_4Cl
Option B	CH_4COONH_4
Option C	KCl
Option D	KCN
Correct Option	**D**

Q. No. 65 0082065	**A reaction is A + B $\rightarrow$ C + D. Initially we start with equal concentration of A and B. At equilibrium, it was found that the number of moles of C is two times that of A. What will be the equilibrium constant?**
Option A	1/2
Option B	1/ 4
Option C	2
Option D	4
Correct Option	**D**

Q. No. 66 0082066	**The increase in pressure at the following equilibrium:** $H_2O(l) \rightleftharpoons H_2O(g)$ **result in the---** **(i) Formation of more $H_2O(g)$** **(ii) Formation of more $H_2O(l)$** **(iii) Increase in b. p. of $H_2O(l)$** **(iv) Decrease in b. p. of $H_2O(l)$**
Option A	(i) & (iii)
Option B	(i) & (iv)
Option C	(ii) & (iii)
Option D	(ii) & (iv)
Correct Option	**C**

Q. No. 67 0082067	**A buffer solution is prepared in which the concentration of NH_3 is 0.30M and the concentration of NH_4^+ is 0.20 M. If the equilibrium constant Kb for NH_3 equals $1.8x10^{-5}$, what is the pH of this solution.**
Option A	10.73
Option B	9.43
Option C	9.08
Option D	8.73
Correct Option	**B**

Q. No. 68 0082068	**The number of moles of $KMnO_4$ that will be needed to react with one mole of SO_3^{2-} in acidic solution.**
Option A	1
Option B	2/5
Option C	3/5
Option D	4/5
Correct Option	**B**

Q. No. 69 0082069	**Among the divalent compounds of Cr, Fe, Mn and Co, which will have the maximum magnetic moment?**
Option A	Cr^{2+} compounds
Option B	Fe^{2+} compounds
Option C	Mn^{2+} compounds

Option D	Co^{2+} compounds
Correct Option	**C**

Q. No. 70 0082070	**CO_2 is isostructural with**
Option A	$SnCl_2$
Option B	$HgCl_2$
Option C	NO_2
Option D	C_2H_6
Correct Option	**B**

Q. No. 71 0082071	**In which of the following pairs, both the ions are coloured in aqueous solutions? [Given that the Atomic no. of Sc = 21, Ti = 22, Ni = 28, Co = 27, Cu = 29]**
Option A	Sc^{3+}, Ti^{3+}
Option B	Sc^{3+}, Co^{2+}
Option C	Ni^{2+}, Cu^{+}
Option D	Ni^{2+}, Ti^{3+}
Correct Option	**D**

Q. No. 72 0082072	**Which of the following series contains only paramagnetic metal ions?**
Option A	La^{3+}, Ce^{3+}, Sm^{3+}
Option B	Sm^{3+}, Ho^{3+}, Lu^{3+}
Option C	Ce^{3+}, Eu^{3+}, Yb^{3+}
Option D	La^{3+}, Gd^{3+}, Eu^{3+}
Correct Option	**C**

Q. No. 73 0082073	**When H_2S is passed through the an acidified solution of $K_2Cr_2O_7$ solution, the oxidation state of Chromium changes from----to ---**
Option A	+6 to +3
Option B	+6 to +2
Option C	+6 to +1
Option D	+7 to +3
Correct Option	**A**

Q. No. 74 0082074	**Which of the following is a peroxide?**
Option A	MnO_2
Option B	KO_2
Option C	BaO_2
Option D	NO_2

Correct Option	**C**

Q. No. 75 0082075	**When sodium metal is dissolved in liquid ammonia, a blue solution is formed. The blue colour is due to -**
Option A	Solvated protons
Option B	Solvated NH_2^- ions
Option C	Solvated electrons
Option D	Solvated Na^+ ions
Correct Option	**C**

Q. No. 76 0082076	**Which of the following can act as Lewis acid?**
Option A	$(CH_3)_3N$
Option B	$(CH_3)_3B$
Option C	$(CH_3)_2O$
Option D	$(CH_3)_3P$
Correct Option	**B**

Q. No. 77 0082077	**How many oxygen atoms are shared by silicate units in forming pyrosilicates?**
Option A	3
Option B	2
Option C	1
Option D	0
Correct Option	**C**

Q. No. 78 0082078	**White fumes appear around the bottle of anhydrous $AlCl_3$ due to**
Option A	Hydrolysis of $AlCl_3$ liberating H_2 gas
Option B	Hydrolysis of $AlCl_3$ liberating HCl gas
Option C	Hydrolysis of $AlCl_3$ liberating Cl_2 gas
Option D	Decomposition of $AlCl_3$
Correct Option	**B**

Q. No. 79 0082079	**In which of the following elements, +1 oxidation state is more stable than +3?**
Option A	Boron
Option B	Alluminium
Option C	Thallium
Option D	Gallium
Correct Option	**C**

Q. No. 80 0082080	**Identify the wrong statement in the following**
Option A	Chloroflurocarbons are responsible for ozone layer depletion.
Option B	Acid rains are mostly because of oxides of sulphur and nitrogen.
Option C	Ozone layer does not permit infrared radiations from the sun to reach the earth.
Option D	Greenhouse effect is responsible for global warming.
Correct Option	**C**

Q. No. 81 0082081	**When 25 mg of K_2SO_4 is dissolved in 2 litre of water at 25^oC (assuming K_2SO_4 to completely dissociated), the osmotic pressure of the solution will be---**
Option A	$52.7x10^{-3}$ atm
Option B	$5.27x10^{-3}$ atm
Option C	$22.7x10^{-3}$ atm
Option D	$2.27x10^{-3}$ atm
Correct Option	**B**

Q. No. 82 0082082	**For the reaction A $\rightarrow$ B, the rate of reaction becomes twenty seven times when the concentration of A is increased three times. What is the order of the reaction?**
Option A	First order reaction
Option B	Second order reaction
Option C	Third order reaction
Option D	Zero order reaction
Correct Option	**C**

Q. No. 83 0082083	**An ore after concentration was found to have basic impurities. The flux can be used is:**
Option A	$CaCO_3$
Option B	SiO_2
Option C	FeO
Option D	$Ca(OH)_2$
Correct Option	**B**

Q. No. 84 0082084	**The halogen with the highest negative electron gain enthalpy is**
Option A	Fluorine
Option B	Chlorine
Option C	Bromine
Option D	Iodine
Correct Option	**B**

Q. No. 85 0082085	**The reaction : $(CH_3)_2CHCl + KOH \rightarrow (CH_3)_2CHOH + KCl$ is classified as--**
Option A	Elimination reaction

Option B	Addition reaction
Option C	Electrophillic substitution reaction
Option D	Nucleophillic substitution reaction
Correct Option	**D**

Q. No. 86 0082086	**If 0.5 g of hydrocarbon gave 0.9 g of water on combustion, then the percentage of carbon in the hydrocarbon is---**
Option A	70%
Option B	80%
Option C	85%
Option D	90%
Correct Option	**B**

Q. No. 87 0082087	**One molecule of symmetrical alkene on ozonolysis gives two molecules of an aldehyde having a molecular mass of 44 u. The alkene is---**
Option A	Ethene
Option B	Propene
Option C	1- butene
Option D	2-butene
Correct Option	**D**

Q. No. 88 0082088	**A compound X (C_5H_8) reacts with ammonical $AgNO_3$ to give a white precipitate, and on oxidation with hot alkaline $KMnO_4$ gives the acid $(CH_3)_2CHCOOH$. Therefore, X is...**
Option A	$CH_2=CHCH=CHCH_3$
Option B	$(CH_3)_2CH\text{-}C\equiv CH$
Option C	$(CH_3)_2C=C=CH_2$
Option D	$CH_3(CH_2)_2C\equiv CH$
Correct Option	**B**

Q. No. 89 0082089	**Isopropyl bromide on Wurtzs reaction gives**
Option A	2,3-dimethylbutane
Option B	Neohexane
Option C	Hexane
Option D	2,2-dimethylbutane
Correct Option	**A**

Q. No. 90 0082090	**Which of the following on treatment with warm dil.H_2SO_4 in the presence of $HgSO_4$ gives butan-2-one.** **(i) But-1-ene** **(ii) But-2-ene** **(iii) But-1-yne** **(iv) But-2-yne**
Option A	(i) & (ii)

Option B	(ii) & (iii)
Option C	(i) & (iv)
Option D	(iii) & (iv)
Correct Option	**D**

Q. No. 91 0082091	**On mixing certain alkane with chlorine and irradiating it with UV light, it forms only one monochloroalkane. The alkane could be--**
Option A	pentane
Option B	propane
Option C	isopentane
Option D	Neopentane
Correct Option	**D**

Q. No. 92 0082092	**Which of the reagent in the following list can be used to distinguish between 1-butyne and 2-butyne.**
Option A	Bromine, CCl_4
Option B	dil.H_2SO_4, $HgSO_4$
Option C	Ammonical Cu_2Cl_2 solution
Option D	H_2, Lindlar catalyst
Correct Option	**C**

Q. No. 93 0082093	**Which of the following compounds contains intramolecular H-Bond?**
Option A	Phenol
Option B	Resorcinol
Option C	Acetic acid
Option D	o-Nitrophenol
Correct Option	**D**

Q. No. 94 0082094	**In DNA the complimentary bases are?**
Option A	Uracil & adenine: cytosine & guanine
Option B	Adenine & thiamine; guanine & cytosine
Option C	Adenine & thiamine; guanine & uracil
Option D	Adenine & Guanine; cytosine & thiamine
Correct Option	**B**

Q. No. 95 0082095	**Which of the following on reduction with lithium aluminium hydride yields a secondary amine?**
Option A	Methyl cyanide
Option B	Nitroethane
Option C	Methylisocyanide
Option D	Acetamide

Correct Option	**C**

Q. No. 96 0082096	**The relative reactivities of acyl compounds towards nucleophillic substitution reaction are in the order-**
Option A	Acyl chloride > Ester > Acid anhydride > Amide
Option B	Acyl chloride > Amide > Ester > Acid anhydride
Option C	Acid anhydride > Amide > Acyl chloride > Ester
Option D	Acyl chloride > Acid anhydride > Ester > Amide
Correct Option	**D**

Q. No. 97 0082097	**Trichloroacetaldehyde was subjected to Cannizaro's reaction by using NaOH. The mixture of products obtained are---**
Option A	Chloroform and sodium trichloacetate
Option B	Trichloromethanol and sodium trichloropropanoate
Option C	2,2,2-Trichloroethanol and sodium trichloroethanoate
Option D	2,2,2-Trichloropropanol and sodium trichloroethanoate
Correct Option	**C**

Q. No. 98 0082098	**Presence of nitro group at benzene ring---**
Option A	Activates the ring towards the electrophilic substitution reactions
Option B	Deactivates the ring towards the electrophilic substitution reactions
Option C	Deactivates the ring toward the nucleophillic substitution reactions
Option D	Renders the ring basic
Correct Option	**B**

Q. No. 99 0082099	**Match the following and choose the correct option-** Column I: i) Phenol; ii) Chloramphenicol; iii) Acetylcholine; iv) Cetyltrimethylammonium chloride Column II: a) Neurotransmitter; b) Cationic detergent; c) Antibiotic; d) Antiseptic
Option A	(i) & (c); (ii) & (b); (iii) & (d); (iv) & (a)
Option B	(i) & (d); (ii) & (a); (iii) & (c); (iv) & (b)
Option C	(i) & (d); (ii) & (c); (iii) & (a); (iv) & (b)
Option D	(i) & (c); (ii) & (d); (iii) & (b); (iv) & (a)
Correct Option	**C**

Q. No. 100 0082100	**Gold numbers of protective colloids X, Y and Z are 0.5, 0.01 and 0.005 respectively. The correct order of their protective powers will be:**
Option A	X > Y > Z
Option B	X < Y < Z

Option C	X > Z > Y
Option D	X < Z < Y
Correct Option	**B**