

### BD Pharmacy 2024

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| Q. No. 1<br>0042001 | <b>Which of the following is dimensionless quantity?</b> |
| Option A            | Heat capacity  |
| Option B            | Dielectric constant                                      |
| Option C            | Angular acceleration                                     |
| Option D            | Plank constant   |
| Correct Option      | <b>B</b>   |

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| Q. No. 2<br>0042002 | <b>The nuclear diameter is usually expressed in the unit of :</b> |
| Option A            | Pico-meter  |
| Option B            | Fermi   |
| Option C            | Micron  |
| Option D            | Millimeter  |
| Correct Option      | <b>B</b>  |

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| Q. No. 3<br>0042003 | <b>If the distance between two masses is increased by a factor of 2, the gravitational force of attraction between them will:</b> |
| Option A            | Remain constant   |
| Option B            | Increased by a factor of 4  |
| Option C            | Decreased by a factor of 4  |
| Option D            | Increased by a factor of 2  |
| Correct Option      | <b>C</b>  |

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| Q. No. 4<br>0042004 | <b>It is easier to roll up a stone on a inclined road than to lift it vertical upwards because:</b> |
| Option A            | Work done in rolling is more than in lifting  |
| Option B            | Work done in lifting the stone is equal to rolling it   |
| Option C            | Work done in both is same but the rate of doing work is less in rolling                             |
| Option D            | Work done in rolling a stone is less than in lifting it   |
| Correct Option      | <b>D</b>  |

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| Q. No. 5<br>0042005 | <b>Rectifiers are used to convert:</b> |
| Option A            | Direct current to Alternating current  |
| Option B            | Alternating current to Direct current  |
| Option C            | High voltage to low voltage            |
| Option D            | Low voltage to high voltage            |
| Correct Option      | <b>B</b>                               |

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| Q. No. 6<br>0042006 | <b>Sound waves travel at the fastest speed in:</b> |
| Option A            | Steel  |
| Option B            | Water  |
| Option C            | Air  |
| Option D            | Vacuum   |
| Correct Option      | <b>A</b>   |

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| Q. No. 7<br>0042007 | <b>Electron emission and Photoelectric effect can be explained with</b> |
| Option A            | Wave nature of light  |

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| Option B       | Huygens principle        |
| Option C       | Particle nature of light |
| Option D       | No one theory exists     |
| Correct Option | <b>C</b>                 |

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| Q. No. 8<br>0042008 | <b>A body of mass 'm' is moving with a constant velocity 'u'. It collides with another stationary body of mass 2 m and they started to move together. After the collision speed of the system will become :</b> |
| Option A            | 2u  |
| Option B            | u/2   |
| Option C            | u/3   |
| Option D            | 3u  |
| Correct Option      | <b>C</b>  |

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| Q. No. 9<br>0042009 | <b>Light of frequency <math>8 \times 10^{15}</math> Hz is incident on a substance of photoelectric work function 6.125 eV. From the following choose the correct maximum kinetic energy of the emitted photoelectrons. (Given <math>h = 4.135 \times 10^{-15}</math> eV)</b> |
| Option A            | 18.1 eV  |
| Option B            | 33.08 eV   |
| Option C            | 26.9 eV  |
| Option D            | 25.23 eV   |
| Correct Option      | <b>C</b>   |

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| Q. No. 10<br>0042010 | <b>The correct relation between the focal length 'f' and radius of curvature 'R' of a mirror is given by the formula:</b> |
| Option A             | $f/2 + 1 = R$   |
| Option B             | $R + 2 = f$   |
| Option C             | $f = R/2$   |
| Option D             | $f = 2R$  |
| Correct Option       | <b>C</b>  |

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| Q. No. 11<br>0042011 | <b>Which of the following will remain unchanged when sound waves travel from air to water?</b> |
| Option A             | Wavelength   |
| Option B             | Speed of the wave  |
| Option C             | Frequency  |
| Option D             | Amplitude  |
| Correct Option       | <b>C</b>   |

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| Q. No. 12<br>0042012 | <b>Which one of the following radiation possesses maximum penetrating power?</b> |
| Option A             | $\alpha$ - rays  |
| Option B             | $\beta$ - rays   |
| Option C             | $\gamma$ - rays  |
| Option D             | All have equal penetrating power   |
| Correct Option       | <b>C</b>   |

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| Q. No. 13<br>0042013 | <b>A falling drop of rain water acquires spherical shape due to the following physical phenomena :</b> |
| Option A             | Surface tension  |
| Option B             | Gravitational force  |
| Option C             | Viscosity  |
| Option D             | Atmospheric pressure   |
| Correct Option       | <b>A</b>   |

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| Q. No. 14<br>0042014 | <b>When 1 liter of water freezes, the volume of ice formed will be? (Density of water = 1 g/cm<sup>3</sup> &amp; Density of ice = 0.9340 g/cm<sup>3</sup>)</b> |
| Option A             | 0.9 liter  |
| Option B             | 1 liter  |
| Option C             | 1.05 liter   |
| Option D             | 1.07 liter   |
| Correct Option       | <b>D</b>   |

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| Q. No. 15<br>0042015 | <b>Temperature is a measure of :</b>  |
| Option A             | Total kinetic energy of molecules     |
| Option B             | Total potential energy of molecules   |
| Option C             | Average kinetic energy of molecules   |
| Option D             | Average potential energy of molecules |
| Correct Option       | <b>C</b>                              |

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| Q. No. 16<br>0042016 | <b>A pendulum of length 'L' supporting mass 'M' swings back and forth with time-period 'T'. If the mass is doubled, what is the new period?</b> |
| Option A             | T   |
| Option B             | 2T  |
| Option C             | T/2   |
| Option D             | T/4   |
| Correct Option       | <b>A</b>  |

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| Q. No. 17<br>0042017 | <b>Which of the following properties shows that light is a transverse wave?</b> |
| Option A             | Reflection  |
| Option B             | Interference  |
| Option C             | Diffraction   |
| Option D             | Polarization  |
| Correct Option       | <b>D</b>  |

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| Q. No. 18<br>0042018 | <b>In a nuclear fission, 0.1% mass is converted into energy. The energy released by the fission of 1 kg mass will be: (Speed of light 'c' = 3x10<sup>8</sup> m/s)</b> |
| Option A             | 9 x 10 <sup>19</sup> J  |
| Option B             | 9 x 10 <sup>17</sup> J  |
| Option C             | 9 x 10 <sup>16</sup> J  |
| Option D             | 9 x 10 <sup>13</sup> J  |
| Correct Option       | <b>D</b>  |

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| Q. No. 19<br>0042019 | <b>When a fuse is rated 8A, it means</b>    |
| Option A             | It will not work if current is less than 8A |
| Option B             | It has a resistance of 8A                   |
| Option C             | It will work only if current is 8A          |
| Option D             | It will burn if current is exceeds 8A       |
| Correct Option       | <b>D</b>                                    |

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| Q. No. 20<br>0042020 | <b>If the electron enters in a magnetic-field at an angle of 90° then the resulting path of the electron will be:</b> |
| Option A             | Circle  |
| Option B             | Helix   |
| Option C             | Straight line   |

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| Option D       | Ellipse  |
| Correct Option | <b>A</b> |

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| Q. No. 21<br>0042021 | <b>Which of the material has highest modulus of elasticity?</b> |
| Option A             | Rubber  |
| Option B             | Steel   |
| Option C             | Glass   |
| Option D             | Aluminum  |
| Correct Option       | <b>B</b>  |

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| Q. No. 22<br>0042022 | <b>For a perfect gas, which of the following correctly represent the Boyle's law? (Where P = Absolute pressure, V = Volume, and T = Absolute temperature)</b> |
| Option A             | T/P = constant, if V is kept constant   |
| Option B             | P V = constant, if T is kept constant   |
| Option C             | V/T = constant, if P is kept constant   |
| Option D             | P/T = constant, if V is kept constant   |
| Correct Option       | <b>B</b>  |

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| Q. No. 23<br>0042023 | <b>In a circular motion the angle between centripetal acceleration and tangential acceleration is?</b> |
| Option A             | 90°  |
| Option B             | 180°   |
| Option C             | 0°   |
| Option D             | 45°  |
| Correct Option       | <b>A</b>   |

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| Q. No. 24<br>0042024 | <b>A doped semiconductor with trivalent materials is known as</b> |
| Option A             | N type semiconductor  |
| Option B             | S type semiconductor  |
| Option C             | P type semiconductor  |
| Option D             | Q type semiconductor  |
| Correct Option       | <b>C</b>  |

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| Q. No. 25<br>0042025 | <b>A perfect black body is one which:</b>                |
| Option A             | Reflects all the heat radiations                         |
| Option B             | Absorbs heat radiations of all wavelengths falling on it |
| Option C             | Black in color   |
| Option D             | Transmits the heat radiations                            |
| Correct Option       | <b>B</b>   |

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| Q. No. 26<br>0042026 | <b>Two forces A and B act on a point P and their resultant force has the magnitude <math>\sqrt{A^2 + B^2}</math>. What is the angle between the forces A and B?</b> |
| Option A             | 0°  |
| Option B             | 120°  |
| Option C             | 90°   |
| Option D             | 45°   |
| Correct Option       | <b>C</b>  |

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| Q. No. 27<br>0042027 | <b>A cubical block of mass 'M' and edge 'a' slides down a rough inclined plane of inclination 'θ' with a uniform velocity. The torque of the normal force on the block about its center has a magnitude</b> |
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| Option A       | Zero                      |
| Option B       | $M g a$                   |
| Option C       | $M g a \sin \theta$       |
| Option D       | $(1/2) M g a \cos \theta$ |
| Correct Option | <b>D</b>                  |

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| Q. No. 28<br>0042028 | Two resistances $30 \Omega$ , and $60 \Omega$ are connected parallel to in a circuit with a battery of 2 volt. Find the value of resultant current 'I' In the circuit. |
| Option A             | 1 / 45 A   |
| Option B             | 1 / 15 A   |
| Option C             | 1/ 10 A  |
| Option D             | 1 / 5 A  |
| Correct Option       | <b>C</b>   |

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| Q. No. 29<br>0042029 | <b>An ice cube is suspended in a vacuum in a gravity-free hall. As the ice melts it :</b> |
| Option A             | Will retain its cubical shape   |
| Option B             | Will change its shape to spherical  |
| Option C             | Will fall down on the floor   |
| Option D             | Will fly up   |
| Correct Option       | <b>B</b>  |

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| Q. No. 30<br>0042030 | <b>Three needles <math>N_1</math>, <math>N_2</math> and <math>N_3</math> are made of a ferromagnetic, a paramagnetic and a diamagnetic substance respectively. A magnet when brought close to them will:</b> |
| Option A             | Attract all three of them  |
| Option B             | Attract $N_1$ and $N_2$ strongly but repel $N_3$   |
| Option C             | Attract $N_1$ strongly, $N_2$ weakly and repel $N_3$ weakly  |
| Option D             | Attract $N_1$ strongly, but repel $N_2$ and $N_3$ weakly   |
| Correct Option       | <b>C</b>   |

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| Q. No. 31<br>0042031 | <b>A body of mass <math>m = 3.513 \text{ kg}</math> is moving along the x-axis with a speed of <math>5.00 \text{ ms}^{-1}</math>. The magnitude of its momentum is recorded as:</b> |
| Option A             | $16.5 \text{ kg-m-s}^{-1}$  |
| Option B             | $18.2 \text{ kg-m-s}^{-1}$  |
| Option C             | $17.6 \text{ kg-m-s}^{-1}$  |
| Option D             | $21.6 \text{ kg-m-s}^{-1}$  |
| Correct Option       | <b>C</b>  |

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| Q. No. 32<br>0042032 | <b>At <math>20 \text{ Kg/sec}^2</math> pressure, volume of 1 liter glycerin reduced by an amount of 0.42 cc. What is the value of bulk modulus of glycerin? (<math>g = 980 \text{ cm/sec}^2</math>).</b> |
| Option A             | $4.66 \times 10^{10} \text{ dyne/cm}^2$  |
| Option B             | $4.47 \times 10^{10} \text{ dyne/cm}^2$  |
| Option C             | $3.67 \times 10^{10} \text{ dyne/cm}^2$  |
| Option D             | $5.47 \times 10^{10} \text{ dyne/cm}^2$  |
| Correct Option       | <b>A</b>   |

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| Q. No. 33<br>0042033 | <b>What is the rms velocity of Nitrogen gas molecules at <math>0^\circ\text{C}</math> temperature (at N.T.P density of Nitrogen gas = <math>1.25 \text{ gm/ litre}</math> and density of mercury = <math>13.6 \text{ gm/cc}</math>).</b> |
| Option A             | $5.97 \times 10^4 \text{ cm/sec}$  |
| Option B             | $3.47 \times 10^4 \text{ cm/sec}$  |
| Option C             | $4.93 \times 10^4 \text{ cm/sec}$  |

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| Option D       | $6.57 \times 10^5 \text{cm/sec}$ |
| Correct Option | <b>C</b>                         |

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| Q. No. 34<br>0042034 | <b>An air capacitor of capacity <math>C = 10 \mu\text{F}</math> is connected to a constant voltage battery of 12 V. Now, the space between the plates is filled with a liquid of dielectric constant 5. The additional charge that flows now from the battery to the capacitor is:</b> |
| Option A             | 24 $\mu\text{C}$   |
| Option B             | 120 $\mu\text{C}$  |
| Option C             | 600 $\mu\text{C}$  |
| Option D             | 480 $\mu\text{C}$  |
| Correct Option       | <b>D</b>   |

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| Q. No. 35<br>0042035 | <b>The half-life of a radioactive substance is 10 days. This means that</b>     |
| Option A             | The substance completely disintegrates in 20 days                               |
| Option B             | The substance completely disintegrates in 40days                                |
| Option C             | 1/8 part of the mass of the substance will be left intact at the end of 30 days |
| Option D             | 7/8 part of the mass of the substance disintegrates in 30 days                  |
| Correct Option       | <b>C</b>  |

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| Q. No. 36<br>0042036 | <b>Magnetic field at the centre of coil having radius <math>r</math> and current <math>I</math>, is</b> |
| Option A             | $\frac{\mu_0 I}{4r}$  |
| Option B             | $\frac{\mu_0 I}{2r}$  |
| Option C             | $\frac{\mu_0 I}{r}$   |
| Option D             | zero  |
| Correct Option       | <b>B</b>  |

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| Q. No. 37<br>0042037 | <b>When light of wavelength <math>2537 \text{ \AA}</math> is made incident on the copper surface, which has the stopping potential 0.24 volt, then find the threshold frequency of copper.</b> |
| Option A             | $2.248 \times 10^{15} \text{ Hz}$  |
| Option B             | $1.124 \times 10^{15} \text{ Hz}$  |
| Option C             | $1.414 \times 10^{14} \text{ Hz}$  |
| Option D             | $1.548 \times 10^{16} \text{ Hz}$  |
| Correct Option       | <b>B</b>   |

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| Q. No. 38<br>0042038 | <b>If P type and N type regions of junction diode are connected to positive and negative terminal of the battery then diode is</b> |
| Option A             | Forward biased   |
| Option B             | Reverse biased   |
| Option C             | Not biased   |
| Option D             | Nothing can be said  |
| Correct Option       | <b>A</b>   |

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| Q. No. 39<br>0042039 | <b>The half life of a radioactive source is</b> |
| Option A             | $1/\lambda$                                     |
| Option B             | $0.693/\lambda$                                 |
| Option C             | $0.693\lambda$                                  |
| Option D             | $\lambda$                                       |

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| Correct Option | <b>B</b> |
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| Q. No. 40<br>0042040 | <b>Angle of contact when liquid do not wet to the surface of solid will be</b> |
| Option A             | Obtuse angle   |
| Option B             | Acute angle  |
| Option C             | Right angle  |
| Option D             | Zero angle   |
| Correct Option       | <b>A</b>   |

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| Q. No. 41<br>0042041 | <b>A cube of density <math>\rho_0</math> is half immersed in the liquid of density of <math>\rho_l</math>. The value of <math>\rho_l</math> will be</b> |
| Option A             | $4 \rho_0$  |
| Option B             | $8\rho_0$   |
| Option C             | $2 \rho_0$  |
| Option D             | $\rho_0/2$  |
| Correct Option       | <b>C</b>  |

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| Q. No. 42<br>0042042 | <b>Which of the following relation is in correct form</b> |
| Option A             | $C_p + C_v = R$   |
| Option B             | $C_p - C_v = R$   |
| Option C             | $C_p / C_v = R$   |
| Option D             | $C_v / C_p = R$   |
| Correct Option       | <b>B</b>  |

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| Q. No. 43<br>0042043 | <b>Two black metallic sphere of radius 4m and 1m have temperatures 2000 K and 4000 K respectively, then the ratio of energy radiated from those will be</b> |
| Option A             | 1:4   |
| Option B             | 4:1   |
| Option C             | 1:1   |
| Option D             | 2:1   |
| Correct Option       | <b>C</b>  |

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| Q. No. 44<br>0042044 | <b>An ideal Carnot engine, whose efficiency is 40%, receives heat at 500 K. If its efficiency becomes 50%, then the intake temperature for the same exhaust temperature will be</b> |
| Option A             | 500 K   |
| Option B             | 600 K   |
| Option C             | 700 K   |
| Option D             | 400 K   |
| Correct Option       | <b>B</b>  |

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| Q. No. 45<br>0042045 | <b>Two light waves are became coherent, when</b>                        |
| Option A             | Both are emitting from same source of light                             |
| Option B             | Both are emitting from different source of light                        |
| Option C             | Both are monochromatic light  |
| Option D             | Both have a constant phase relationship with respect to time and space. |
| Correct Option       | <b>D</b>  |

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| Q. No. 46<br>0042046 | <b>The diamond shines because:</b> |
| Option A             | It absorbs maximum light           |

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| Option B       | It transmits maximum light   |
| Option C       | Of refraction the light      |
| Option D       | Of total internal reflection |
| Correct Option | <b>D</b>                     |

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| Q. No. 47<br>0042047 | <b>The soap bubbles of colorless soap solution appear multi-colored in the sun light. It is due to</b> |
| Option A             | Polarization of light  |
| Option B             | Interference of light  |
| Option C             | Diffraction of light   |
| Option D             | Quantum nature of light  |
| Correct Option       | <b>B</b>   |

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| Q. No. 48<br>0042048 | <b>The charges <math>3 \times 10^{-9}</math> C and <math>10^{-9}</math> C are separated at a distance of 5 cm apart. Find the force between them.</b> |
| Option A             | $1.08 \times 10^5$ N  |
| Option B             | $1.08 \times 10^6$ N  |
| Option C             | $1.08 \times 10^{-5}$ N   |
| Option D             | $1.08 \times 10^{-6}$ N   |
| Correct Option       | <b>C</b>  |

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| Q. No. 49<br>0042049 | <b>A network is being analyzed using Kirchhoff's rules of current. If the wrong direction is assumed for one of currents I, then the calculated current will be</b> |
| Option A             | 0   |
| Option B             | - I   |
| Option C             | I   |
| Option D             | 2 I   |
| Correct Option       | <b>B</b>  |

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| Q. No. 50<br>0042050 | <b>In D.C. circuit P. O. Box and Meter Bridge works on the principle of:</b> |
| Option A             | Wheatstone Bridge  |
| Option B             | Anderson Bridge  |
| Option C             | Maxwell's Bridge   |
| Option D             | Schering Bridge  |
| Correct Option       | <b>A</b>   |

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| Q. No. 51<br>0072051 | <b>The Compound having highest value of van't Hoff factor (i) for complete dissociation of Solute in aqueous solution.</b> |
| Option A             | NaCl   |
| Option B             | KCl  |
| Option C             | MgSO <sub>4</sub>  |
| Option D             | K <sub>2</sub> SO <sub>4</sub>   |
| Correct Option       | <b>D</b>   |

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| Q. No. 52<br>0072052 | <b>The Unit of molal elevation Constant is :</b> |
| Option A             | Kg. K <sup>-1</sup> mol                          |
| Option B             | Kg. K. mol <sup>-1</sup>                         |
| Option C             | Kg. K <sup>-1</sup> .mol <sup>-1</sup>           |
| Option D             | Kg <sup>-1</sup> .K . mol.                       |
| Correct Option       | <b>B</b>   |

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| Q. No. 53<br>0072053 | <b>An azeotropic mixture of two liquids has a boiling point higher than either of the two liquids when it.</b> |
| Option A             | Show large negative deviation from Raoult's law  |
| Option B             | show no deviation from Raoult's law  |
| Option C             | Show large positive deviation from Raoult's law  |
| Option D             | Obeys Raoult's law   |
| Correct Option       | <b>A</b>   |

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| Q. No. 54<br>0072054 | <b>The quantity of charge required to obtain one mole of aluminium from <math>Al_2O_3</math> is :-</b> |
| Option A             | 1 F  |
| Option B             | 6 F  |
| Option C             | 2 F  |
| Option D             | 3 F  |
| Correct Option       | <b>D</b>   |

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| Q. No. 55<br>0072055 | <b>In fuel Cell:</b>   |
| Option A             | chemical energy is Converted to electrical energy              |
| Option B             | energy of Combustion of fuel is converted to chemical energy   |
| Option C             | energy of Combustion of fuel is converted to electrical energy |
| Option D             | electrical energy is converted to Chemical energy.             |
| Correct Option       | <b>C</b>   |

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| Q. No. 56<br>0072056 | <b>The molar Conductance of NaCl, HCl and <math>CH_3COONa</math> at infinite dilution are 126.45, 426.16 and 91.0 <math>S.cm^2 mol^{-1}</math> respectively. The molar Conductance of <math>CH_3COOH</math> at infinite dilution is:-</b> |
| Option A             | 201.28 $S.cm^2 mol^{-1}$  |
| Option B             | 390.71 $S.cm^2 mol^{-1}$  |
| Option C             | 698.28 $S.cm^2 mol^{-1}$  |
| Option D             | 548.48 $S.cm^2 mol^{-1}$  |
| Correct Option       | <b>B</b>  |

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| Q. No. 57<br>0072057 | <b>The role of Catalyst is to change _____.</b> |
| Option A             | Gibbs energy of reaction                        |
| Option B             | Activation energy of Reaction                   |
| Option C             | Enthalpy of reaction                            |
| Option D             | Equilibrium Constant                            |
| Correct Option       | <b>B</b>  |

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| Q. No. 58<br>0072058 | <b>The rate of Reaction Increases with temperature due to</b> |
| Option A             | Decrease in activation energy                                 |
| Option B             | Increase in activation energy                                 |
| Option C             | Increase in collision frequency                               |
| Option D             | Increase in concentration                                     |
| Correct Option       | <b>C</b>  |

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|----------------------|--|
| Q. No. 59<br>0072059 | <b>The slope in the plot of <math>[R]</math> and time for a zero order Reaction is:-</b> |
| Option A             | +K/2.303   |
| Option B             | -K   |
| Option C             | -K /2.303  |

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|----------------|----------|
| Option D       | +k       |
| Correct Option | <b>B</b> |

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| Q. No. 60<br>0072060 | <b>The spine only magnetic moment of Ni<sup>+2</sup> in aqueous solution would be (Atomic No. of Ni =28) ?</b> |
| Option A             | 1.73 B.M   |
| Option B             | 2.84 B.M   |
| Option C             | 4.90 B.M   |
| Option D             | 0.0 B.M  |
| Correct Option       | <b>B</b>   |

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| Q. No. 61<br>0072061 | <b>Which of the following has the maximum number of Unpaired d-electrons ?</b> |
| Option A             | Zn   |
| Option B             | Ni <sup>+3</sup>   |
| Option C             | Fe <sup>+2</sup>   |
| Option D             | Cu   |
| Correct Option       | <b>C</b>   |

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| Q. No. 62<br>0072062 | <b>Among of the following the most stabe complex is:-</b>          |
| Option A             | [Fe(H <sub>2</sub> O) <sub>6</sub> ] <sup>+2</sup>                 |
| Option B             | [Fe (C <sub>2</sub> O <sub>4</sub> ) <sub>3</sub> ] <sup>- 3</sup> |
| Option C             | [Fe(NH <sub>3</sub> ) <sub>6</sub> ] <sup>+3</sup>                 |
| Option D             | [FeCl <sub>6</sub> ] <sup>-3</sup>                                 |
| Correct Option       | <b>B</b>   |

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| Q. No. 63<br>0072063 | <b>The Co-ordination Compound having tetrahedral geometry is:-</b> |
| Option A             | [Ni (CN) <sub>4</sub> ] <sup>-2</sup>                              |
| Option B             | [Fe(CO) <sub>5</sub> ]   |
| Option C             | [ Ni(CO) <sub>4</sub> ]  |
| Option D             | [Cr(CO) <sub>6</sub> ]   |
| Correct Option       | <b>C</b>   |

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| Q. No. 64<br>0072064 | <b>Which of the following ion an outer orbital complex ?</b> |
| Option A             | [Fe(CN) <sub>6</sub> ] <sup>-3</sup>                         |
| Option B             | [Co F <sub>6</sub> ] <sup>-3</sup>                           |
| Option C             | [Co(NH <sub>3</sub> ) <sub>6</sub> ] <sup>+3</sup>           |
| Option D             | [ Ni(CN) <sub>4</sub> ] <sup>-2</sup>                        |
| Correct Option       | <b>B</b>   |

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| Q. No. 65<br>0072065 | <b>The best method for the Conversion of an alcohol into an alkyl Chloride is by treating the alcohol with:-</b> |
| Option A             | PCl <sub>5</sub>   |
| Option B             | SOCl <sub>2</sub> in presence of pyridine  |
| Option C             | PCl <sub>3</sub>   |
| Option D             | Dry HCl in presence of Anhydrous ZnCl <sub>2</sub> .   |
| Correct Option       | <b>B</b>   |

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| Q. No. 66<br>0072066 | <b>Reaction of alkyl halide with aromatic compounds in presence of Anhydrous <math>\text{AlCl}_3</math> is known as:-</b> |
| Option A             | Friedal - Craft reaction  |
| Option B             | Hofmann degradation   |
| Option C             | Kolbe's synthesis   |
| Option D             | Beckmann rearrangement  |
| Correct Option       | <b>A</b>  |

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| Q. No. 67<br>0072067 | <b>Williamson's Synthesis of preparing dimethyl ether is an : -</b> |
| Option A             | $\text{SN}^1$ reaction  |
| Option B             | $\text{SN}^2$ reaction  |
| Option C             | Elimination reaction  |
| Option D             | Nucleophilic addition reaction.                                     |
| Correct Option       | <b>B</b>  |

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| Q. No. 68<br>0072068 | <b>Which of the following is most acidic in nature ?</b> |
| Option A             | Phenol   |
| Option B             | Ethanol  |
| Option C             | Ortho-Cresol   |
| Option D             | Ortho-Nitro phenol                                       |
| Correct Option       | <b>D</b>   |

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| Q. No. 69<br>0072069 | <b>Iodoform test is not given by :-</b> |
| Option A             | Ethanol                                 |
| Option B             | Ethanal                                 |
| Option C             | Pentan -2-one                           |
| Option D             | Pentan-3-one                            |
| Correct Option       | <b>D</b>                                |

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| Q. No. 70<br>0072070 | <b>The oxidation of toluene to Benzaldehyde by chromyl chloride is Called :-</b> |
| Option A             | Wurt'z reaction  |
| Option B             | Cannizaro reaction   |
| Option C             | Etard's reaction   |
| Option D             | Reimer-Tiemann reaction  |
| Correct Option       | <b>C</b>   |

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| Q. No. 71<br>0072071 | <b>Which of the following is least basic ?</b> |
| Option A             | $(\text{CH}_3)_2\text{NH}$                     |
| Option B             | $(\text{CH}_3)_3\text{N}$                      |
| Option C             | $\text{C}_6\text{H}_5\text{-NH}_2$             |
| Option D             | $\text{NH}_3$                                  |
| Correct Option       | <b>C</b>                                       |

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| Q. No. 72<br>0072072 | <b>Primary, secondary and tertiary amine can be differentiated by :-</b> |
| Option A             | Schiffs test   |
| Option B             | Tollen's test  |
| Option C             | Fehling's test   |
| Option D             | Hinsberg's test  |

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| Correct Option | <b>D</b> |
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| Q. No. 73<br>0072073 | <b>Which of the following polymers is stored in the liver of animals ?</b> |
| Option A             | Amylose  |
| Option B             | Cellulose  |
| Option C             | Glycogen   |
| Option D             | Amylopectin  |
| Correct Option       | <b>C</b>   |

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| Q. No. 74<br>0072074 | <b>The nitrogen base not present in DNA :-</b> |
| Option A             | Adenine  |
| Option B             | Guanine  |
| Option C             | Uracil   |
| Option D             | Cytosine                                       |
| Correct Option       | <b>C</b>                                       |

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| Q. No. 75<br>0072075 | <b>What is equivalent weight of oxalic acid (<math>H_2C_2O_4 \cdot 2H_2O</math>) if its molecular weight is 126 ?</b> |
| Option A             | 98  |
| Option B             | 63  |
| Option C             | 196   |
| Option D             | 126   |
| Correct Option       | <b>B</b>  |

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| Q. No. 76<br>0072076 | <b>Calculate the molarity of NaOH in the solution prepared by dissolving Its 4gm in enough water to form 250 ml of the Solution</b> |
| Option A             | 0.4M  |
| Option B             | 0.04M   |
| Option C             | 0.10M   |
| Option D             | 0.26 M  |
| Correct Option       | <b>A</b>  |

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| Q. No. 77<br>0072077 | <b>The pair, in which ion are Isoelectronic with <math>Al^{+3}</math> is:-</b> |
| Option A             | $Br^-$ and $Be^{+2}$   |
| Option B             | $Cl^-$ and $Li^+$  |
| Option C             | $S^{-2}$ and $K^+$   |
| Option D             | $O^{-2}$ and $Mg^{+2}$   |
| Correct Option       | <b>D</b>   |

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| Q. No. 78<br>0072078 | <b>Value of absorbed and emitted energy is said to be:-</b> |
| Option A             | Kinetic energy  |
| Option B             | Potential energy  |
| Option C             | Quanta  |
| Option D             | Exchange energy   |
| Correct Option       | <b>C</b>  |

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| Q. No. 79<br>0072079 | <b>What would be the IUPAC name and symbol for the element with atomic number 120 ?</b> |
| Option A             | Unbinilium (Ubn)  |
| Option B             | Unnilunium (Unu)  |

|                |                   |
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| Option C       | Ununquadium (Uug) |
| Option D       | Unniloctium (Uno) |
| Correct Option | <b>A</b>          |

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| Q. No. 80<br>0072080 | <b>Considering the elements B, Al, Mg and K the correct order of their metallic character is:-</b> |
| Option A             | $K > Mg > Al > B$  |
| Option B             | $B > Al > Mg > K$  |
| Option C             | $Al > Mg > B > K$  |
| Option D             | $Mg > Al > K > B$  |
| Correct Option       | <b>A</b>   |

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| Q. No. 81<br>0072081 | <b>The correct geometry and hybridization for <math>XeF_4</math> are:-</b> |
| Option A             | Octahedral, $SP^3 d^2$   |
| Option B             | Trigonal bipyramidal, $SP^3 d$   |
| Option C             | Squar planar, $SP^3 d^2$   |
| Option D             | Trigonal planar, $SP^3$  |
| Correct Option       | <b>A</b>   |

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| Q. No. 82<br>0072082 | <b>Which Compound has maximum dipole moment ?</b> |
| Option A             | $CHCl_3$  |
| Option B             | $CCl_4$   |
| Option C             | $CH_3Cl$  |
| Option D             | $CH_2Cl_2$  |
| Correct Option       | <b>C</b>  |

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| Q. No. 83<br>0072083 | <b>The Bond order and magnetic behaviour of <math>O_2^-</math> ion are, respectively:-</b> |
| Option A             | 1.5 and paramagnetic   |
| Option B             | 1.5 and diamagnetic  |
| Option C             | 2.0 and diamagnetic  |
| Option D             | 1.0 and paramagnetic   |
| Correct Option       | <b>A</b>   |

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| Q. No. 84<br>0072084 | <b>Which statement is Incorrect ?</b>   |
| Option A             | Work is a state function.               |
| Option B             | Temperature is a state function.        |
| Option C             | Entropy is a extensive properties.      |
| Option D             | Work appears at boundary of the system. |
| Correct Option       | <b>A</b>                                |

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| Q. No. 85<br>0072085 | <b>In any natural process occurring in the Universe:-</b> |
| Option A             | Entropy decreases   |
| Option B             | Entropy remain unchanged                                  |
| Option C             | Entropy Increases   |
| Option D             | Entropy Conserved   |
| Correct Option       | <b>C</b>  |

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| Q. No. 86<br>0072086 | <b>The Conjugate base of <math>NH_2^-</math> is :-</b> |
|----------------------|--|

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|----------------|------------------------------|
| Option A       | NH <sub>3</sub>              |
| Option B       | NH <sub>4</sub> <sup>+</sup> |
| Option C       | NH <sup>-2</sup>             |
| Option D       | NH <sub>2</sub>              |
| Correct Option | <b>C</b>                     |

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| Q. No. 87<br>0072087 | <b>For N<sub>2</sub> (g) + 3H<sub>2</sub>(g) → 2NH<sub>3</sub>(g) that, the relationship between K<sub>p</sub> and K<sub>c</sub> is :-</b> |
| Option A             | K <sub>p</sub> = K <sub>c</sub> (RT)   |
| Option B             | K <sub>p</sub> =K <sub>c</sub> (RT) <sup>-2</sup>  |
| Option C             | K <sub>p</sub> =K <sub>c</sub>   |
| Option D             | K <sub>p</sub> ≠ K <sub>c</sub>  |
| Correct Option       | <b>B</b>   |

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| Q. No. 88<br>0072088 | <b>The oxidation number of Cr in K<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> and that of Mn in KMnO<sub>4</sub> are respectively :-</b> |
| Option A             | +6 and +5  |
| Option B             | +6 and +7  |
| Option C             | +7 and +5  |
| Option D             | +3 and + 7   |
| Correct Option       | <b>B</b>   |

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| Q. No. 89<br>0072089 | <b>Which of the following act as electrophile?</b> |
| Option A             | BF <sub>3</sub>                                    |
| Option B             | NH <sub>3</sub>                                    |
| Option C             | H <sub>2</sub> O                                   |
| Option D             | R-OH   |
| Correct Option       | <b>A</b>   |

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| Q. No. 90<br>0072090 | <b>The number of Sigma (σ) and pi (π) bonds in pent-2-en-4- yne is:-</b> |
| Option A             | 13 σ bonds and no π bond   |
| Option B             | 8 σ bonds and 5 π bonds  |
| Option C             | 10 σ bonds and 3 π bonds   |
| Option D             | 11 σ bonds and 2 π bonds   |
| Correct Option       | <b>C</b>   |

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| Q. No. 91<br>0072091 | <b>Two volatile liquids A and B differ in their boiling points by 15K. The process which can be used to separate them is:-</b> |
| Option A             | Simple distillation  |
| Option B             | Steam distillation   |
| Option C             | Fractional distillation  |
| Option D             | Distillation under reduced pressure.   |
| Correct Option       | <b>C</b>   |

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| Q. No. 92<br>0072092 | <b>An example of halogenation of alkane is :-</b> |
| Option A             | Electrophilic Substitution reaction               |
| Option B             | Nucleophilic substitution reaction                |
| Option C             | Free radical Substitution reaction                |
| Option D             | oxidation   |

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| Correct Option | <b>C</b> |
|----------------|----------|

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| Q. No. 93<br>0072093 | <b>Phenol on distillation with Zn Powder gives:-</b> |
| Option A             | Benzene  |
| Option B             | Biphenyl   |
| Option C             | Cyclohexane  |
| Option D             | Anisole  |
| Correct Option       | <b>A</b>   |

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| Q. No. 94<br>0072094 | <b>Which of the following alkene show geometrical Isomerism ?</b> |
| Option A             | 1-butene  |
| Option B             | 2-butene  |
| Option C             | Propene   |
| Option D             | 2-methyl propene  |
| Correct Option       | <b>B</b>  |

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| Q. No. 95<br>0072095 | <b>The correct order sequence of of the increasing covalent character is:</b> |
| Option A             | LiCl < NaCl < BeCl <sub>2</sub>   |
| Option B             | BeCl <sub>2</sub> < LiCl < NaCl   |
| Option C             | NaCl < LiCl < BeCl <sub>2</sub>   |
| Option D             | BeCl <sub>2</sub> < NaCl < LiCl   |
| Correct Option       | <b>C</b>  |

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| Q. No. 96<br>0072096 | <b>In diborane molecule</b>                                    |
| Option A             | Four bridged hydrogen and two terminal hydrogen are present    |
| Option B             | Two bridged hydrogen and four terminal hydrogen are present    |
| Option C             | Three bridged hydrogen and three terminal hydrogen are present |
| Option D             | Three bridged hydrogen and two terminal hydrogen are present   |
| Correct Option       | <b>B</b>   |

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|----------------------|---|
| Q. No. 97<br>0072097 | <b>Non-ideal gases approach ideal behaviour Under:-</b> |
| Option A             | High temperature and high pressure.                     |
| Option B             | High temperature and low pressure                       |
| Option C             | Low temperature and high pressure                       |
| Option D             | Low temperature and low pressure.                       |
| Correct Option       | <b>B</b>  |

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| Q. No. 98<br>0072098 | <b>Depletion of the ozone layer is caused due to</b> |
| Option A             | Ferrocene  |
| Option B             | Fullerenes   |
| Option C             | Freons   |
| Option D             | Polyhalogens   |
| Correct Option       | <b>C</b>   |

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| Q. No. 99<br>0072099 | <b>Which is used as a moderator in nuclear reactor ?</b> |
| Option A             | H <sub>2</sub> O   |
| Option B             | H <sub>2</sub> O <sub>2</sub>                            |

|                |                               |
|----------------|-------------------------------|
| Option C       | D <sub>2</sub> O              |
| Option D       | H <sub>3</sub> O <sup>+</sup> |
| Correct Option | <b>C</b>                      |

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| Q. No. 100<br>0072100 | <b>Choose the correct statement : -</b>  |
| Option A              | Diamond is sp <sup>3</sup> hybridised and graphite is sp <sup>2</sup> hybridised |
| Option B              | Diamond and graphite are used as dry lubricant                                   |
| Option C              | Diamond and graphite have two dimensional network                                |
| Option D              | Diamond is covalent and graphite is ionic  |
| Correct Option        | <b>A</b>   |

