

Assam CEE 2024 Question Paper

41. A piece of copper and another of germanium are cooled from room temperature to 100K. The resistance of

- (A) copper decreases and germanium increases
 - (B) copper increases and germanium decreases
 - (C) each of them decreases
 - (D) each of them increases
-

42. In the uranium radioactive series the initial nucleus is ^{238}U and the final nucleus is ^{206}Pb . When the uranium nucleus decays to lead, the number of α -particles and β -particles emitted respectively are:

- (A) 4, 6
 - (B) 8, 6
 - (C) 5, 8
 - (D) 7, 4
-

43. The ratio of specific heats $\frac{C_P}{C_V}$ in terms of degrees of freedom (n) is given by:

- (A) $1 + \frac{n}{3}$
 - (B) $1 + \frac{2}{n}$
 - (C) $1 + \frac{1}{n}$
 - (D) $1 + \frac{n}{2}$
-

44. A transverse wave is described by the equation $y = A \sin \left(2\pi \left(\frac{x}{\lambda} - \frac{t}{T} \right) \right)$. The maximum particle velocity is equal to four times the wave velocity if:

- (A) $\lambda = 2A$
- (B) $\lambda = \pi A$
- (C) $\lambda = \frac{\pi A}{2}$
- (D) $\lambda = \frac{\pi A}{4}$

45. A pulse of light of duration 50 ns is absorbed completely by a small object initially at rest. Power of the pulse is 60 mW and speed of light is 3×10^8 m/s. The final momentum of the object is:

- (A) 1.0×10^{-17} kg m/s
 - (B) 3.0×10^{-17} kg m/s
 - (C) 1.0×10^{-16} kg m/s
 - (D) 3.0×10^{-16} kg m/s
-

46. A series R-C combination is connected to an AC voltage of angular frequency $\omega = 1000$ rad/s. If the impedance of the RC circuit is $R/\sqrt{2}$, the time constant (in milliseconds) of the circuit is:

- (A) 3
 - (B) 1
 - (C) $\frac{1}{2}$
 - (D) $\frac{1}{3}$
-

47. A block of mass 300 g is kept stationary on a smooth inclined plane by applying a minimum horizontal force $F = \sqrt{a} N$ as shown in the figure. The value of a is (Take $g = 10 \text{ m/s}^2$):

- (A) 12
 - (B) 24
 - (C) 27
 - (D) 9
-

48. Two very long, straight, and insulated wires are kept at a 90° angle from each other in the x-y plane as shown in the figure. These wires carry equal currents of magnitude I , whose directions are shown in the figure. The net magnetic field at point P will be:

- (A) $\frac{\mu I}{2\pi(x+y)}$
- (B) $-\frac{\mu I}{2\pi(x+y)}$
- (C) $\frac{\mu I}{\pi(x+y)}$

(D) Zero

49. At temperature T , the probability of ideal gas molecules with mass m having speed v is given by $P(v)$. Two quantities I_1 and I_2 are defined in terms of $P(v)$ as follows:

$$I_1 = \int_0^\infty P(v)v^3 dv \quad \text{and} \quad I_2 = \int_0^\infty P(v)v dv$$

Which of the following relationship is true?

(A) $I_1 = I_2$

(B) $I_1 = \frac{I_2}{2}$

(C) $I_1 > I_2$

(D) $I_1 < I_2$

50. Consider a viscous fluid having uniform density ρ and coefficient of viscosity η . Two solid spheres with radius R_1 and R_2 fall into this liquid and acquire terminal velocities of V and $8V$ respectively. If the densities of the two spheres are 2ρ and 3ρ respectively, then R_1 is equal to R_2 ?

(A) 2

(B) $\frac{1}{2}$

(C) 8

(D) $\frac{1}{8}$

51. In a Doppler effect experiment, initially an observer and the source are moving towards each other with equal speeds. The observed frequency in this case is found to be f_0 . The observed frequency once they cross each other is found to be f' . If f is the frequency at the source, f' is equal to:

(A) $\frac{f_0+f}{\sqrt{f_0f}}$

(B) $\frac{f_0-f}{f_0}$

(C) $\frac{f_0}{f_0}$

(D) $f' = f \left(\frac{f_0}{f_0} \right)$

52. 1 gm of ice at 0°C is mixed with 1 gm of water at 100°C . At thermal equilibrium,

the temperature of the mixture will be:

- (A) 50°C
 - (B) 20°C
 - (C) 10°C
 - (D) 100°C
-

53. Consider two radioactive materials A and B. When A decays into 6.25 percent of its original amount, B decays into 25 percent of its original amount. The ratio of their decay constants λ_A and λ_B is:

- (A) 1:4
 - (B) 4:1
 - (C) 1:2
 - (D) 2:1
-

54. The efficiency of a Carnot engine operating between a reservoir and an sink is η . If the temperature of the reservoir is increased by 50% and that of the sink is decreased by 50%, the new efficiency will be:

- (A) $\frac{\eta}{2}$
 - (B) 4η
 - (C) $\frac{200\eta}{3}$
 - (D) $\frac{\eta}{4}$
-

55. The dimension of force constant is

- (A) $[M^1 L T^{-2}]$
 - (B) $[M^0 L^1 T^{-2}]$
 - (C) $[M^1 L^1 T^{-2}]$
 - (D) $[M^1 L T^{-1}]$
-

56. Two bodies (A and B) of masses 7 kg and 3 kg are attached to each other in the following way. If a force of 100 N is applied on A along the x direction, the force on A on B will be

- (A) 10 N
 - (B) 20 N
 - (C) 30 N
 - (D) 9.8 N
-

57. A system goes from state a to b along the path abc, when 20 kJ of heat flows into the system and the system does 7.6 kJ of work. If the system is returned back from b to a along the curved path bca due to a work of 5 kJ done on it, then

- (A) 12.6 kJ of heat will be absorbed by the system
 - (B) 19.5 kJ of heat will be rejected by the system
 - (C) 7.5 kJ of heat will be absorbed by the system
 - (D) 17.5 kJ of heat will be rejected by the system
-

58. For a straight wire carrying steady current in the vertically upward direction as shown below

- (A) The magnetic field lines around the wire are directed clockwise and the magnetic field strength at A is more than that at B.
 - (B) The magnetic field lines around the wire are directed anti-clockwise and the magnetic field strength at A is less than that at B.
 - (C) The magnetic field lines around the wire are directed clockwise and the magnetic field strength at A and B are the same.
 - (D) The magnetic field lines around the wire are directed anti-clockwise and the magnetic field strength at A is more than that at B.
-

59. Four closed surfaces and corresponding charge distributions are shown below. The respective electric fluxes through the surfaces S_1, S_2, S_3, S_4 are $\Phi_1, \Phi_2, \Phi_3, \Phi_4$. Then, which of the following is correct?

- (A) $\Phi_1 > \Phi_2 > \Phi_3 > \Phi_4$
- (B) $\Phi_1 = \Phi_2 > \Phi_3 > \Phi_4$
- (C) $\Phi_1 > \Phi_2 = \Phi_3 > \Phi_4$
- (D) $\Phi_1 > \Phi_2 = \Phi_3 < \Phi_4$

60. A particle moves in a circle of radius R . In half the period of revolution its displacement and distance covered respectively are:

- (A) $2R, \pi R$
 - (B) $2\pi R, 2R$
 - (C) $R, 2R$
 - (D) $\pi R, \frac{R}{2}$
-

61. The work function of a given metal is 4 eV. The longest wavelength of light that can cause photoelectron emission from this metal is:

- (A) 220 nm
 - (B) 400 nm
 - (C) 310 nm
 - (D) 520 nm
-

62. A point object is placed at a distance of 25 cm from a thin plano-convex lens of focal length 20 cm. The plane surface of the lens is now silvered. The image created by the system is at:

- (A) 100 cm to the left of the system
 - (B) 100 cm to the right of the system
 - (C) 16.7 cm to the right of the system
 - (D) 16.7 cm to the left of the system
-

63. A ray of light passes through four transparent media with refractive index n_1, n_2, n_3, n_4 as shown in the figure. The surfaces of all media are parallel. If the emergent ray ST is parallel to the incident ray PQ, we must have:

- (A) $n_1 = n_2$
 - (B) $n_4 = n_1$
 - (C) $n_3 = n_4$
 - (D) $n_2 = n_3$
-

64. The temperature of an ideal gas is increased from 75 K to 300 K. If at 75 K the r.m.s. velocity of the gas molecules is v , at 300 K it becomes:

- (A) $v = 2v$
 - (B) $v = \sqrt{2}v$
 - (C) $v = 4v$
 - (D) $v = \frac{1}{2}v$
-

65. A liquid drop of radius $R = 0.1$ m having surface tension $S = \frac{0.01}{4\pi}$ N/m divides itself into n identical drops. In the process, the total change in the surface energy $\Delta U = 10^{-4}$ J. The value of n is

- (A) 121
 - (B) 1381
 - (C) 8
 - (D) 27
-

66. If the angular momentum of a planet of mass M , moving around the sun in a circular orbit, is L . The areal velocity of the planet about the center of the sun is

- (A) $\frac{L}{M}$
 - (B) $\frac{4L}{M}$
 - (C) $\frac{L}{2M}$
 - (D) $\frac{2L}{M}$
-

67. The torque of a force $\mathbf{F} = 4\hat{i} - 2\hat{j} + 3\hat{k}$ about the origin is $\mathbf{r}$. The force acts on a particle having position vector $\hat{i} + 2\hat{j} - \hat{k}$. Then the torque $\mathbf{r}$ is:

- (A) $4\hat{i} - \hat{j} - 10\hat{k}$
 - (B) $8\hat{i} - 7\hat{j} + 6\hat{k}$
 - (C) $4\hat{i} - 7\hat{j} - 10\hat{k}$
 - (D) $8\hat{i} + \hat{j} - 10\hat{k}$
-

68. A wire of length L meter carrying current i ampere is bent in the form of a circle. The magnitude of its magnetic moment in SI units is:

- (A) $\frac{iL^2}{4\pi}$
 - (B) $\frac{iL^2}{\pi}$
 - (C) $\frac{iL^2}{2\pi}$
 - (D) $\frac{iL^2}{m}$
-

69. In the circuit below, A and B represent two inputs and C represents the output. The circuit represents:

- (A) NOR gate
 - (B) OR gate
 - (C) NAND gate
 - (D) AND gate
-

70. The current I drawn from the 5 volt source will be:

- (A) 0.17 A
 - (B) 0.38 A
 - (C) 0.5 A
 - (D) 0.67 A
-

71. A particle is moving in a uniform circular motion of radius R with angular velocity ω in the anti-clockwise direction. Another particle is also moving along the same circular path but in the clockwise direction with the same angular velocity ω . Suppose, both the particles start at $t = 0$ from the same point $(R, 0)$ in opposite directions. The minimum time t after which the velocities of the two particles become orthogonal to each other is:

- (A) $\frac{\pi}{4\omega}$
 - (B) $\frac{\pi}{2\omega}$
 - (C) $\frac{\pi}{\omega}$
 - (D) $\frac{\pi}{8\omega}$
-

72. Consider a uniformly dense spherical shell of inner radius a and outer radius b . If M is the mass of the shell, the moment of inertia of the spherical shell about an axis

passing through its center is:

- (A) $\frac{3Mb^2}{5}$
 - (B) Mb^2
 - (C) $\frac{M}{(b^2+a^2)}$
 - (D) $\frac{3Mb^5-5Mb^3}{b^3-a^3}$
-

73. Consider the following spring configurations:

If the first spring is stretched by an amount Δx , the second system will be stretched by:

- (A) Δx
 - (B) $\frac{\Delta x}{4}$
 - (C) $\frac{\Delta x}{2}$
 - (D) $2\Delta x$
-

74. Which of the following is not a representation of uniform motion?

- (A) Linear increase in distance with time
 - (B) Constant increase in distance with time
 - (C) Non-linear increase in distance with time
 - (D) Constant decrease in distance with time
-

75. The total displacement of the object that exhibits the following motion is

- (A) 150 m
 - (B) 100 m
 - (C) 75 m
 - (D) 15 m
-

76. The magnetic properties of magnets are

- (A) Lost at its boiling point
 - (B) Gained at its melting point
 - (C) Intake at Triple point
 - (D) Lost at its Curie point
-

77. Diffraction of light involves

- (A) Dispersion
 - (B) Refraction
 - (C) Polarization
 - (D) Interference
-

78. The densities of the nuclei: ${}^{24}_{12}\text{Mg}$, ${}^{40}_{20}\text{Ca}$ and ${}^{88}_{38}\text{Sr}$,

- (A) Have increasing trend
 - (B) Have decreasing trend
 - (C) Remain same
 - (D) None of these is correct
-

79. For a system executing simple harmonic motion,

- (A) Displacement leads velocity and acceleration by phase of $\frac{\pi}{2}$ and π , respectively
 - (B) Displacement lags both velocity and acceleration by a phase of $\frac{\pi}{2}$
 - (C) Displacement lags velocity and acceleration by phase of $\frac{\pi}{2}$ and π , respectively
 - (D) Displacement, velocity and acceleration are in phase
-

80. In the following circuit, the charge stored in capacitors C_1 , C_2 , and C_3 are

- (A) 18 C, 36 C, 54 C
 - (B) 24 C, 48 C, 216 C
 - (C) 2.7 C, 1.33 C, 0.30 C
 - (D) 12 C, 24 C, 36 C
-

81. The molar conductance of KCl, HCl and CH_3COOK are 152, 425 and $91 \text{ cm}^2 \text{ ohm}^{-1}$ respectively. Here, the molar conductance of CH_3COOH at infinite dilution would be.

- (A) $346 \text{ cm}^2 \text{ ohm}^{-1}$
- (B) $364 \text{ cm}^2 \text{ ohm}^{-1}$
- (C) $389 \text{ cm}^2 \text{ ohm}^{-1}$
- (D) $486 \text{ cm}^2 \text{ ohm}^{-1}$

82. In $K[Cr(H_2O)_6](C_2O_4)_2 \cdot 3H_2O$, the spin only magnetic moment of Cr^3 ion is

- (A) 2.87 B.M.
 - (B) 3.87 B.M.
 - (C) 3.47 B.M.
 - (D) 4.89 B.M.
-

83. The CORRECT order of ionic radii of the following lanthanides is:

- (A) $Eu^{3+} > Ce^{3+} > Tb^{3+}$
 - (B) $Ce^{3+} > Eu^{3+} > Tb^{3+}$
 - (C) $Eu^{3+} = Ce^{3+} > Tb^{3+}$
 - (D) $Eu^{3+} > Ce^{3+} > Tb^{3+}$
-

84. Among the following, the compound with highest melting point is:

- (A) Benzene with one chlorine atom attached
 - (B) Benzene with two chlorine atoms attached
 - (C) Benzene with three chlorine atoms attached
 - (D) Benzene with chlorine atoms attached in a particular arrangement
-

85. The most effective reaction for the synthesis of 1-methoxy-4-nitrobenzene is:

- (A) 1-Bromo-4-nitrobenzene reacting with sodium methoxide
 - (B) 1-Bromo-4-nitrobenzene reacting with sodium chloride
 - (C) 1-Bromo-4-nitrobenzene reacting with sodium methoxide and chlorine
 - (D) Reaction leading to a different product
-

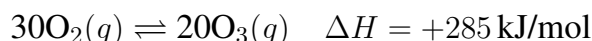
86. Among the following, the molecule which shows aromatic character is:

- (A) Benzene (C_6H_6)
 - (B) Cyclohexene
 - (C) Cycloheptatriene
 - (D) Cyclooctatetraene
-

87. Identify the essential amino acid among the following:

- (A) $HS C C C O O H$
 - (B) $HO C C C O_2 H$
 - (C) $H_2 N O C C C O_2 H$
 - (D) $C_6 H_5 C C O_2 H$
-

88. For the following reaction at 298 K:



The equilibrium constant, K_c , is

$K_c = 2.47 \times 10^{-31}$ at 298 K. The value of K_c will increase when 298 K is increased.

- (A) Temperature is increased and pressure is decreased.
 - (B) Temperature is decreased and pressure is increased.
 - (C) Temperature is decreased and pressure is decreased.
 - (D) Temperature and pressure both are increased.
-

89. O_2 molecule has:

- (A) 10 bonding electrons, 6 antibonding electrons and is diamagnetic.
 - (B) 8 bonding electrons, 4 antibonding electrons and is paramagnetic.
 - (C) 10 bonding electrons, 6 antibonding electrons and is paramagnetic.
 - (D) 8 bonding electrons, 4 antibonding electrons and is diamagnetic.
-

90. According to Bohr's theory, when principal quantum number is 2, the radius of Be^{3+} will be:

- (A) 52.90 pm
 - (B) 26.45 pm
 - (C) 105.80 pm
 - (D) 13.23 pm
-

91. A solid forms fcc unit cell with 2A side length. If another solid with exactly same

atomic radius (r) as that of the above solid forms a simple cubic lattice, the side length of the unit cell will be:

- (A) $\sqrt{2} A$
 (B) $2 A$
 (C) $\frac{2}{\sqrt{2}} A$
 (D) $\frac{1}{\sqrt{2}} A$

92. For the reaction, $A + B \rightarrow$ products, the following data is obtained:

A + B $\rightarrow$ products, the following data is given:

Exp. No.	$[A]$ (mol L ⁻¹)	$[B]$ (mol L ⁻¹)	Initial rate (mol L ⁻¹ s ⁻¹)
1	0.2	0.4	0.8
2	0.4	0.2	1.6
3	0.3	0.2	0.4

The rate law of the reaction is:

- (A) $k[A][B]$
 (B) $k[A]$
 (C) $k[B]^2$
 (D) $k[A]^1[B]^2$

93. 2 moles of a solute is dissolved in 1 kg water ($K_b = 0.52 \text{ K kg}$

mol⁻¹). The solute dissociates to give 3 moles of particles in solution. The elevation of boiling point will be :

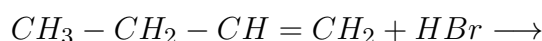
- (A) 3.18 K
 (B) 1.04 K
 (C) 1.56 K
 (D) 2.08 K

94. The boiling point and melting point of a pure solvent are 353.3 K and 278.6 K, respectively. A solute is dissolved in the solvent to get a solution. Which one of the following can be true?

- (A) The boiling point and melting point of the solution are 352.42 K and 279.2 K, respectively.

- (B) The boiling point and melting point of the solution are 352.42 K and 279.9 K, respectively.
- (C) The boiling point and melting point of the solution are 354.11 K and 279.2 K, respectively.
- (D) The boiling point and melting point of the solution are 352.42 K and 276.83 K, respectively.
-

95. The main product formed in the following reaction is:



- (A) 1-Bromobutane
- (B) 2-Bromobutane
- (C) 1-Bromo-2-methyl propane
- (D) 2-Bromo-2-methyl propane
-

96. The hydrophilic part of $CH_3(CH_2)_{16}COO^-Na^+$ is:

- (A) COO^-
- (B) $CH_3(CH_2)_{16}^-$
- (C) Na^+
- (D) CH_3^-
-

98. The pH value of 0.005 M $Ba(OH)_2$, assume $Ba(OH)_2$ is completely ionized, is :

- (A) 5
- (B) 3
- (C) 10
- (D) 12
-

99. The wavelength of an electron moving with a velocity of $2.2 \times 10^7 \text{ ms}^{-1}$ is:

- (A) $3.5 \times 10^{-10} \text{ m}$
- (B) $3.5 \times 10^{-11} \text{ m}$
- (C) $3.3 \times 10^{-10} \text{ m}$

(D) $3.3 \times 10^{-11} \text{ m}$

100. The INCORRECT combination of quantum numbers amongst the following is:

- (A) $n = 1, l = 0, m_l = 0, m_s = -\frac{1}{2}$
 - (B) $n = 1, l = 1, m_l = 0, m_s = +\frac{1}{2}$
 - (C) $n = 2, l = 1, m_l = +1, m_s = -\frac{1}{2}$
 - (D) $n = 3, l = 1, m_l = 0, m_s = +\frac{1}{2}$
-

101. For a first order reaction with rate constant of 230 s^{-1} , the half-life is:

- (A) $3.45 \times 10^{-2} \text{ s}$
 - (B) $3.01 \times 10^{-2} \text{ s}$
 - (C) $3.45 \times 10^{-3} \text{ s}$
 - (D) $3.01 \times 10^{-3} \text{ s}$
-

102. For the compounds given below, the CORRECT order of increasing oxidation number of I is:

- (A) $\text{ICl} < \text{HI} < \text{HIO}_3$
 - (B) $\text{HI} < \text{ICl} < \text{HIO}_2 < \text{KIO}_3$
 - (C) $\text{HIO}_2 < \text{ICl} < \text{HI} < \text{KIO}_3$
 - (D) $\text{KIO}_3 < \text{HIO}_2 < \text{ICl} < \text{HI}$
-

103. Identify the strongest base among the following amines:

- (A) $\text{C}_6\text{H}_5\text{NH}_2$
 - (B) $\text{C}_2\text{H}_5\text{NH}_2$
 - (C) $\text{C}_6\text{H}_5\text{NH}_2$
 - (D) $\text{C}_6\text{H}_5\text{NH}_2$
-

104. The reducing agent X suitable for the following reduction reaction is:

- (A) LiAlH_4
- (B) B_2H_6
- (C) NaBH_4

(D) CaO

105. Which of the following compounds is most acidic?

- (A) $\text{C}_6\text{H}_5\text{OH}$
 - (B) $\text{o} - \text{O}_2\text{N} - \text{C}_6\text{H}_4\text{OH}$
 - (C) $\text{m} - \text{O}_2\text{N} - \text{C}_6\text{H}_4\text{OH}$
 - (D) $\text{p} - \text{O}_2\text{N} - \text{C}_6\text{H}_4\text{OH}$
-

106. Identify the major products 'A' and 'B' for the following reactions:

- (A) A: $\text{CH}_2 = \text{CH}_2$, B: $\text{CH}_3\text{CH}_2\text{OH}$
 - (B) A: $\text{CH}_2 = \text{CH}_2$, B: $\text{CH}_3\text{CH}_2\text{OCH}_3$
 - (C) A: CH_3CH_2 , B: $\text{CH}_3\text{CH}_2\text{OCH}_3$
 - (D) A: $\text{CH}_3\text{CH}_2\text{CH}_2$, B: $\text{CH}_3\text{CH}_2\text{O}$
-

107. During a process the enthalpy change of the system, ΔH is positive and entropy change of the system, ΔS is negative. The process will be:

- (A) spontaneous at all temperatures
 - (B) spontaneous when ΔH is negative and ΔS is positive
 - (C) spontaneous when ΔH is positive and ΔS is negative
 - (D) non-spontaneous at all temperatures
-

108. In an irreversible isothermal expansion of 2 moles of an ideal gas, work done (W) is found to be $(-P_{ext}V)$. If the same isothermal expansion is carried out reversibly, the work done will be:

- (A) -0.683 RT
 - (B) -1.386 RT
 - (C) -0.3010 RT
 - (D) 0
-

109. Which one of the following has a non-zero resultant dipole moment?

- (A) BeF_2

- (B) NF_3
 - (C) BF_3
 - (D) CO_2
-

110. Which one of the following is the most acidic?

- (A) Na_2O
 - (B) Al_2O_3
 - (C) CaO
 - (D) Cl_2O_7
-

111. The second ionisation enthalpy is the highest for

- (A) F
 - (B) Ne
 - (C) Na
 - (D) Mg
-

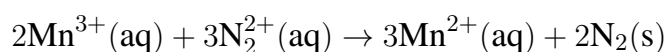
112. The CORRECT electronic configuration of Cr is

- (A) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 3d^5$
 - (B) $1s^2 2s^2 2p^6 3s^2 3p^6 3d^6$
 - (C) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^4$
 - (D) $1s^2 2s^2 2p^6 3s^2 3p^3 3d^{10}$
-

113. For a multielectron atom, the CORRECT order of the orbital energy is

- (A) $6s > 5p > 4s > 3d$
 - (B) $5p > 6s > 4f > 4s$
 - (C) $6s > 5p > 4f > 4s$
 - (D) $4f > 6s > 5p > 4s$
-

114. For the following reaction



The standard Gibbs free energy change (ΔG°) of the reaction is

- (A) $-6F$
 - (B) $-12F$
 - (C) $-3F$
 - (D) $-9F$
-

115. The standard electrode potential of electrode-A and electrode-B are -0.25 V and -0.76 V , respectively. If a Galvanic cell is created using these two electrodes, the standard electromotive force (EMF) of this cell will be:

- (A) 0.51 V and electrode-B will act as anode
 - (B) 0.51 V and electrode-A will act as anode
 - (C) 0.51 V and electrode-B will act as anode
 - (D) 1.01 V and electrode-B will act as anode
-

116. The state of hybridization of carbon and shape of the formaldehyde molecule, respectively are:

- (A) sp^2 , Trigonal planar
 - (B) sp^2 , Tetrahedral
 - (C) sp^3 , Trigonal planar
 - (D) sp^3 , Tetrahedral
-

117. The IUPAC name of the following compound is:

- (A) 1-Ethyl-4-Fluoro-3-nitro benzene
 - (B) 1-Ethyl-2-Fluoro-1-nitro benzene
 - (C) 3-Ethyl-6-Fluoro-1-nitro benzene
 - (D) 4-Ethyl-1-Fluoro-2-nitro benzene
-

118. An aqueous solution of a dibasic acid (MW = 118) containing 35.4 g of the acid per liter of the solution, has density 1.00 g/cm^3 . The normality and molality values of the solution respectively will be:

- (A) 0.6 N , 0.3 mol Kg^{-1}

- (B) 0.3 N, 0.3 mol Kg⁻¹
(C) 0.3 N, 0.6 mol Kg⁻¹
(D) 0.6 N, 0.6 mol Kg⁻¹
-

119. Which one of the following compounds is the most reactive in S_N1 reaction?

- (A) C₆H₅-CH₂Br
(B) C₆H₅-CH₂Br
(C) C₆H₅-CH₂Br
(D) C₆H₅-CH₂-C₆H₅
-

120. Lactose is a disaccharide present in milk. It comprises of

- (A) β - D-Galactose and β - D-Glucose
(B) α - D-Galactose and β - D-Glucose
(C) β - D-Glucose and β - D-Fructose
(D) β - D-Glucose and α - D-Glucose
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