

JEE Main Online Exam 2019

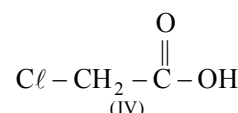
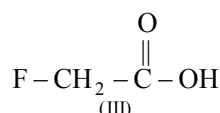
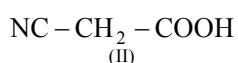
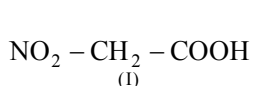
[Memory Based Paper]

Questions & Answer

9th January 2019 | Shift - I

CHEMISTRY

Q.1 What is the correct order of acidic-strength ?



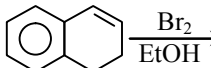
(1) I > II > III > IV

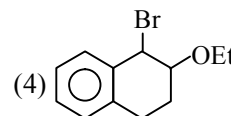
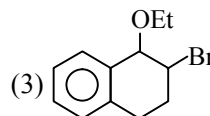
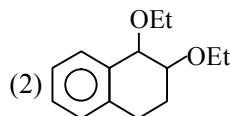
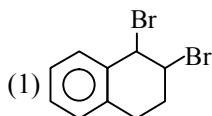
(2) I > III > II > IV

(3) II > IV > III > I

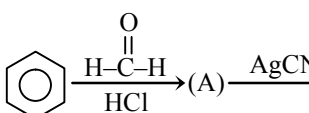
(4) I > III > IV > II

Ans. [1]

Q.2  Major product will be -



Ans. [3]

Q.3  (A) and (B) respectively are -

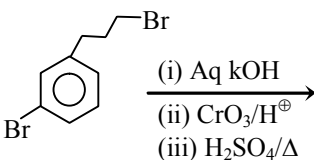
(1) Benzyl chloride & Benzyl cyanide

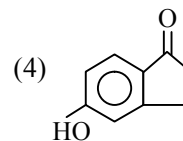
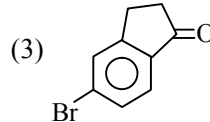
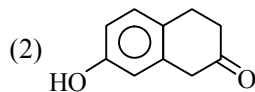
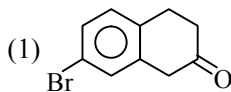
(2) Benzyl chloride & Benzyl isocyanide

(3) Benzyl alcohol & Benzyl isocyanide

(4) Benzyl alcohol & Benzyl cyanide

Ans. [2]

Q.4 



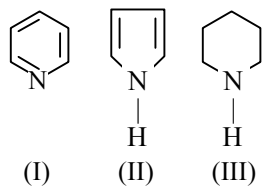
Ans. [3]

Q.5 Most Acidic compound is -

- (1) CH_3 (2) CHBr_3 (3) CHCl_3 (4) $\text{CH}(\text{CN})_3$

Ans. [4]

Q.6 Basic Strength order in



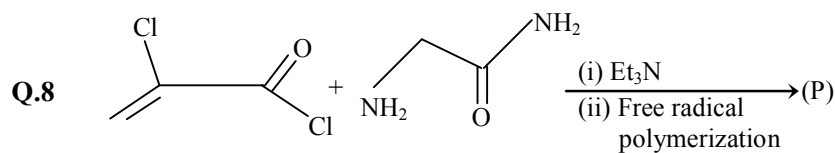
- (1) $\text{I} > \text{II} > \text{III}$ (2) $\text{III} > \text{I} > \text{II}$ (3) $\text{III} > \text{II} > \text{I}$ (4) $\text{I} > \text{III} > \text{II}$

Ans. [2]

Q.7 $\text{R}-\text{C}\equiv\text{N} \xrightarrow[\text{H}_2\text{O}]{\text{Al}(\text{i-But})_2\text{H}}$ product. Product is -

- (1) $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{OH}$ (2) $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{H}$ (3) $\text{R}-\overset{\text{O}}{\parallel}{\text{C}}-\text{NH}_2$ (4) $\text{R}-\text{CH}_2-\text{NH}_2$

Ans. [2]



P is -

- (1) $\text{-(CH}_2\text{-C)}_n\text{-}$
 $\begin{array}{c} \text{Cl} \\ | \\ \text{C} \\ | \\ \text{C}=\text{O} \\ || \\ \text{O} \end{array} \text{-NH-CH}_2\text{-C(=O)-NH}_2$
- (2) $\text{-(CH}_2\text{-C)}_n\text{-}$
 $\begin{array}{c} \text{Cl} \\ | \\ \text{C} \\ | \\ \text{O}=\text{C}-\text{NH}_2 \end{array}$
- (3) $\text{-(CH}_2\text{-C)}_n\text{-}$
 $\begin{array}{c} \text{Cl} \\ | \\ \text{C} \\ | \\ \text{C}=\text{O} \\ || \\ \text{O} \end{array} \text{-NH}_2$
- (4) $\text{-(CH}_2\text{-C)}_n\text{-}$
 $\begin{array}{c} \text{Cl} \\ | \\ \text{C} \\ | \\ \text{C}=\text{O} \\ || \\ \text{O} \end{array} \text{-NH-C(=O)-NH}_2$

Ans. [1]

Q.9 Arrange the following amino acid in basic strength : Lysine, Aspartic acid, Arginine, Glycine.

- (1) $\text{Arg} > \text{Lys} > \text{Gly} > \text{Asp}$ (2) $\text{Lys} > \text{Gly} > \text{Arg} > \text{Asp}$
 (3) $\text{Asp} > \text{Arg} > \text{Gly} > \text{Lys}$ (4) $\text{Asp} > \text{Gly} > \text{Lys} > \text{Arg}$

Ans. [1]

Q.10

A	Chloroxylenol	P	NaHCO ₃ Test
B	Norethindrone	Q	Carbylamine Test
C	Sulphapyridine	R	FeCl ₃ Test
D	Penicillin	S	KMnO ₄ Test

- (1) A-R, B-S, C-Q, & D-P
(2) A-P, B-Q, C-R, & D-S
(3) A-S, B-P, C-Q, & D-R
(4) A-Q, B-S, C-R, & D-P

Ans. [1]

Q.11 Which of the following ore contain iron and copper

- (1) Copper Pyrites
(2) Malachite
(3) Dolomite
(4) Cuprite

Ans. [1]

Q.12 Aluminium shows +3 oxidation state but thallium shows +1 and +3 both why

- (1) I.E. (2) Electron affinity (3) Lattice structure (4) Inert pair effect

Ans. [4]

Q.13 Going down the group which properties decrease and increase respectively

- (1) Electro negativity, and Atomic Radius
(2) Atomic Radius and Electro negativity
(3) Electro negativity and electron gain enthalpy
(4) Electro gain enthalpy and electro negativity

Ans. [1]

Q.14 Which of the following is highest value of spin only magnetic moment in transition metal complex may be -

- (1) 6.92 (2) 5.92 (3) 7.92 (4) 8.92

Ans. [2]

Q.15 Which is correct for Li₂⁺ or Li₂⁻

- (1) Both are stable
(2) Li₂⁺ is more stable than Li₂⁻
(3) Li₂⁻ is more stable than Li₂⁺
(4) Both do not exist

Ans. [2]

Q.16 In which of the following no water of crystallization is present

- (1) Mg(NO₃)₂ (2) Ca(NO₃)₂ (3) Sr(NO₃)₂ (4) Ba(NO₃)₂

Ans. [4]

Q.17 Which properties are shown by silicon polymer

- (a) water repellent
- (b) non toxic
- (c) high dielectric strength and resistant to oxidation
- (d) used in grease.

- (1) a, b, c only (2) a, b only (3) b, c only (4) a, b, c, d

Ans. [4]

Q.18 Which is not prescribed concentration of some metal in drinking water.

- (1) Zn = 0.05 PPM (2) Mn = 0.5 PPM (3) Fe = 0.2 PPM (4) Cu = 2.0 PPM

Ans. [2]

Q.19 Which of the following are isotope of Hydrogen

- (1) Deuterium, Tritium
- (2) Protium, Deuterium
- (3) Protium, Tritium
- (4) Protium, Deuterium, Tritium

Ans. [4]

Q.20 Consider the compound A $[\text{Cr}(\text{H}_2\text{O})_6]\text{Cl}_3$; yellow B : $[\text{Cr}(\text{NH}_3)_6]\text{Cl}_3$; violet. Then which of the following is incorrect.

- (1) $(\Delta_0)\text{A} < (\Delta_0)\text{B}$
- (2) The crystal field splitting parameter can be measured by wavelengths of complementary colours for (A) and (B) respectively
- (3) Both are paramagnetic with three unpaired electrons each
- (4) The crystal field splitting parameter can be measured by wavelength of yellow and violet colours for (A) and (B) respectively

Ans. [4]

The crystal field splitting parameter can be measured by wavelength of yellow & violet colours for A and B respectively.

Q.21 When electron is excited from $n_i = 8$ to $n_f = n$ if graph between $\bar{\nu}$ (wave number) and $\frac{1}{n^2}$ is plotted

then correct statement is -.

- (1) Straight line with -ve slope ($-R_H$)
- (2) Straight line with +ve slope ($+R_H$)
- (3) non linear with -ve slope ($-R_H$)
- (4) Intercept = R_H

Ans. [2]

Q.22 20 ml, 0.1 M H_2SO_4 and 30 ml, 0.2 M NH_4OH are mixed, find, out pH of resulting solution, if $\text{p}K_b = 4.7$

- (1) 5.3 (2) 5.0 (3) 9.0 (4) 9.4

Ans. [3]

Q.23 For a particular chemical reaction $2A + B \rightarrow \text{Product}$ if concentration of reactants and rate of reaction is given as -

[A], M	[B], M	rate of reaction ms^{-1}
0.1	0.20	6.93×10^{-3}
0.1	0.25	6.93×10^{-3}
0.2	0.30	1.386×10^{-2}

Determine half life period for the chemical reaction -

- (1) 10 (2) 100 (3) 1 (4) None

Ans. [1]

Q.24 Which of the following Henry's Law statement is not correct -

- (1) If Henry's constant increases solubility of gas increases.
 (2) The partial pressure of a gas is directly proportional to mole fraction of the gas in the liquid.
 (3) For same value of pressure different gases have different value of k_H
 (4) As temperature increases value of k_H increases.

Ans. [1]

Q.25 0.05 F charge is passed through a lead storage battery. In the anodic reaction, what is the amount of PbSO_4 precipitated (molar mass of PbSO_4 is 303 g/mol)

- (1) 30.3 g (2) 15.15 g (3) 7.6 g (4) 60.6 g

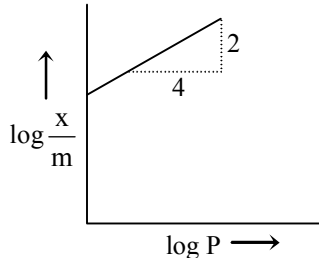
Ans. [3]

Q.26 Calculate molality of Na^+ , if 92 gm Na^+ is dissolved in 1 kg of H_2O .

- (1) 4 m (2) 2 m (3) 5 m (4) 3 m

Ans. [1]

Q.27 The adsorption isotherm is given as below :



Then $\frac{x}{m}$ is proportional to -

- (1) P (2) $P^{1/2}$ (3) $P^{1/3}$ (4) P^2

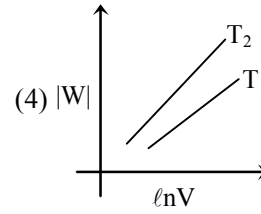
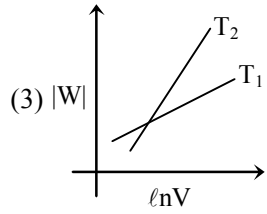
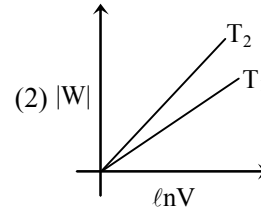
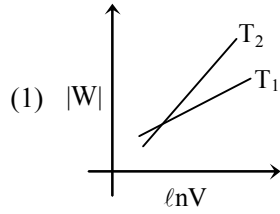
Ans. [2]

Q.28 There are mixture of two gases 'A' and 'B' are taken in a container having volume equal to 10 dm^3 and temperature equals to 1000 K and pressure 200 Pa. If moles of A given are 0.5. Find out moles of gas B

- (1) $\frac{4-R}{2R}$ (2) $\frac{4+R}{2R}$ (3) $\frac{2-R}{2R}$ (4) $\frac{2}{R}$

Ans. [1]

Q.29 Reversible isothermal expansion of gas for two temperature T_1 & T_2 ($T_2 > T_1$). Graph of $|W|$ Vs $\ln V$ will be -



Ans. [4]

Q.30 Which of the following is piezoelectric material -

(1) Silica

(2) Quartz

(3) Mica

(4) Beryl

Ans. [2]