

# ChemGGuru

## JEE Main Online Exam 2019

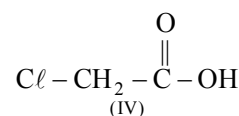
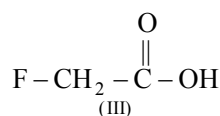
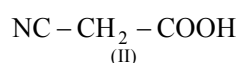
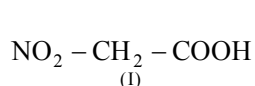
### [Memory Based Paper]

#### Questions & Answer

Morning | 9<sup>th</sup> January 2019

#### CHEMISTRY

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



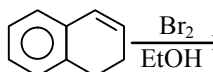
(1) I > II > III > IV

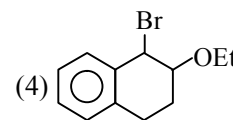
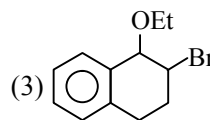
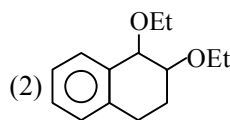
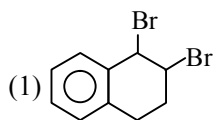
(2) I > III > II > IV

(3) II > IV > III > I

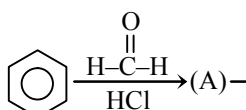
(4) I > III > IV > II

**Ans.** [1]

**Q.2**  Major product will be -



**Ans.** [3]

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

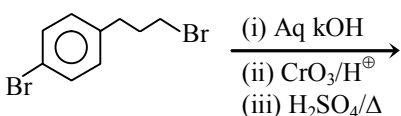
(1) Benzyl chloride & Benzyl cyanide

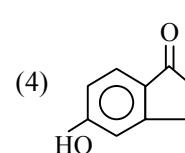
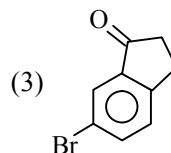
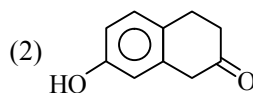
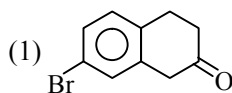
(2) Benzyl chloride & Benzyl isocyanide

(3) Benzyl alcohol & Benzyl isocyanide

(4) Benzyl alcohol & Benzyl cyanide

**Ans.** [2]

**Q.4** 



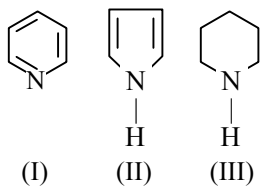
**Ans.** [3]

**Q.5** Most Acidic compound is -

- (1)  $\text{CH}_3\text{I}$  (2)  $\text{CHBr}_3$  (3)  $\text{CHCl}_3$  (4)  $\text{CH}(\text{CN})_3$

**Ans.** [4]

**Q.6** Basic Strength order in



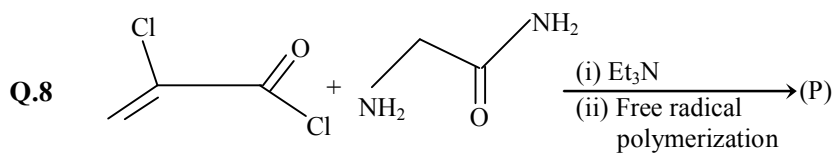
- (1)  $\text{I} > \text{II} > \text{III}$  (2)  $\text{III} > \text{I} > \text{II}$  (3)  $\text{III} > \text{II} > \text{I}$  (4)  $\text{I} > \text{III} > \text{II}$

**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) (2)
- (3) (4)

**Ans.** [1]

**Q.9** Arrange correct basic strength order in amino acids is -

- (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	Phenol	P	NaHCO <sub>3</sub> Test
B	Navthinth drone	Q	Carbylamine Test
C	Sulphamine	R	FeCl <sub>3</sub> Test
D	Pencinilene	S	KMnO <sub>4</sub> 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 Li<sub>2</sub><sup>+</sup> or Li<sub>2</sub><sup>-</sup>

- (1) Both are stable (2) Li<sub>2</sub><sup>+</sup> is more stable than Li<sub>2</sub><sup>⊖</sup>  
 (3) Li<sub>2</sub><sup>⊖</sup> is more stable than Li<sub>2</sub><sup>+</sup> (4) Both do not exist

Ans. [2]

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

- (1) Mg(NO<sub>3</sub>)<sub>2</sub> (2) Ca(NO<sub>3</sub>)<sub>2</sub> (3) Sr(NO<sub>3</sub>)<sub>2</sub> (4) Ba(NO<sub>3</sub>)<sub>2</sub>

Ans. [4]

**Q.17** Which properties are shown by silicon

- (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 is isotope of Hydrogen

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

**Ans.** [4]

**Q.20**  $[\text{Cr}(\text{H}_2\text{O})_6]\text{Cl}_3$                        $[\text{Cr}(\text{NH}_3)_6]\text{Cl}_3$

Yellow                      Violet

Which of the following is incorrect

- (1) Paramagnetic and 3 unpaired electron  
 (2) Absorb complementary colours.  
 (3)  $[\text{Cr}(\text{H}_2\text{O})_6]\text{Cl}_3$  has less  $\Delta_0$  (splitting energy) than  $[\text{Cr}(\text{NH}_3)_6]\text{Cl}_3$   
 (4) It will absorb energy from violet & yellow light

**Ans.** [4]

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

**Q.21** When  $e^-$  excited from  $n_i = 8$  to  $n_f = n$  the graph between  $\bar{\nu}$  (wave number) and  $\frac{1}{n^2}$  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) None

**Ans.** [2]

**Q.22** 20 ml, 0.1 M  $\text{H}_2\text{SO}_4$  and 30 ml, 0.2 M  $\text{NH}_4\text{OH}$  are mixed, find, out pH of resulting solution, if  $\text{pK}_b = 4.7$

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

**Ans.** [3]

**Q.23** For a particular chemical reaction concentration of reactants and rate of reaction is given as -

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

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** 0.5 F charge is passed from  $\text{PbSO}_4$  (aq) solution. Calculate wt. of Pb deposited. [ $\text{Pb SO}_4 = 303$ ]

- (1) 52 g (2) 303 g (3) 152 g (4) 150.15 g

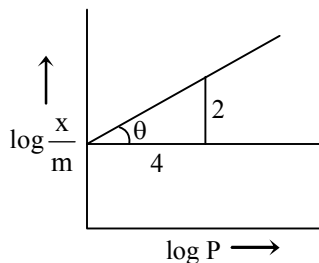
**Ans.** [1]

**Q.26** Calculate molality of  $\text{Na}^+$ , if 92 gm  $\text{Na}^+$  is dissolved in 1 kg of  $\text{H}_2\text{O}$ .

- (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)  $P^2$

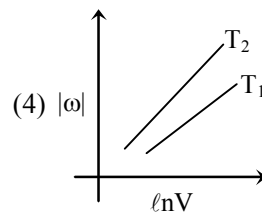
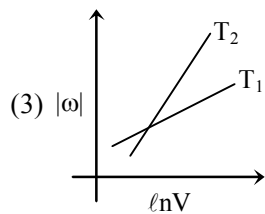
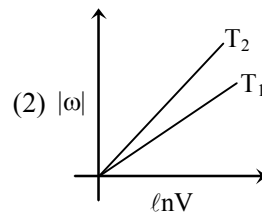
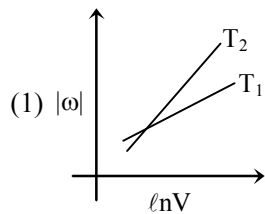
**Ans.** [2]

**Q.28** There are mixture of two gases 'A' and 'B' are taken in a container having volume equal to  $10 \text{ dm}^3$  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  $|\omega|$  Vs  $\ell nV$  will be -



**Ans.** [4]

**Q.30** Which of the following is piezoelectric material -

(1) Silica

(2) Quartz

(3) Mica

(4) Beryl

**Ans.** [2]