



JEE Main Online Exam 2019

[Memory Based Paper]

Questions & Answer

10th January 2019 | Shift - I

CHEMISTRY

Q.1 What is Wilkinson catalyst -

- (1) $[\text{RhCl}(\text{PPh}_3)_3]$ (2) $[\text{RhCl}(\text{PPh}_3)_2\text{CH}_3]$ (3) $[\text{RhCl}(\text{PPh}_3)(\text{CH}_3)_2]$ (4) $[\text{RhCl}(\text{PH}_3)_3]$

Ans. [1]

Q.2 Hall Heroult's process is -

- (1) $\text{Cr}_2\text{O}_3 + \text{Al} \rightarrow \text{Cr} + \text{Al}_2\text{O}_3$ (2) $\text{Al}_2\text{O}_3 + 3\text{C} \rightarrow 2\text{Al} + 3\text{CO}$
(3) $\text{Al}_2\text{O}_3 + \text{Cr}_2\text{O}_3 \rightarrow \text{CrO}_5 + \text{Al}$ (4) $\text{H}_2 + \frac{1}{2}\text{O}_2 \rightarrow \text{H}_2\text{O}$

Ans. [2]

Q.3 Due to lanthanide contraction what happens in lanthanoids -

- (1) Atomic radius increases and ionic radius decreases
(2) Atomic and ionic radii decreases
(3) Only atomic radii decreases but not ionic radii
(4) Both atomic and ionic radii increases

Ans. [2]

Q.4 What is the hybridisation and number of lone pair in XeOF_4

- (1) sp^2 , 2 (2) sp^3 , 2 (3) sp^3d^2 , 1 (4) sp^3d^2 , 2

Ans. [3]

Q.5 Which metal is used in X-ray tube -

- (1) Na (2) Mg (3) Ca (4) Be

Ans. [1]

Q.6 Electronegativity of Aluminium is similar to -

- (1) Mg (2) Li (3) Na (4) Be

Ans. [4]

Q.7 BOD of sample A is 10 ppm and BOD of sample B is 20 ppm. Which one is correct

- (1) A is safe for drinking water and B is not safe.
- (2) A is more polluted than B
- (3) B is more polluted than A
- (4) B is safe for drinking water and A is not safe.

Ans. [3]

Q.8 Which is correct for the nature of H_2O_2

- (1) it can act as oxidising as well as reducing agent in acidic and alkaline medium.
- (2) it can act as oxidising agent in acidic medium and reducing agent in basic medium.
- (3) It can act as reducing agent in acidic medium and oxidising agent in basic medium.
- (4) None of these

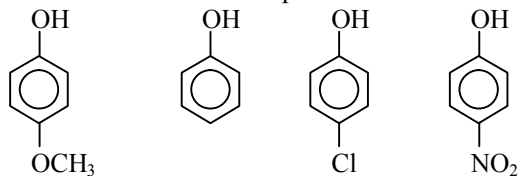
Ans. [1]

Q.9 In which of the following two π bond and half sigma bond is present -

- (1) N_2
- (2) N_2^+
- (3) O_2
- (4) O_2^+

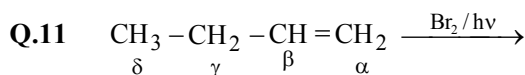
Ans. [2]

Q.10 What is correct order of pKa



- (I)
 - (II)
 - (III)
 - (IV)
- (1) $IV < II < III < I$
 - (2) $II < IV < I < III$
 - (3) $IV < III < II < I$
 - (4) $IV < I < III < II$

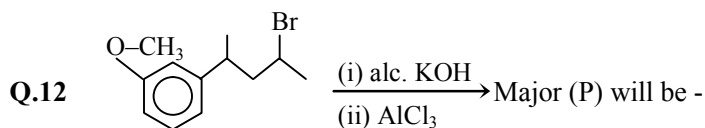
Ans. [3]



Which hydrogen will be abstracted very fast -

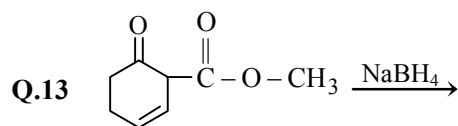
- (1) α
- (2) β
- (3) γ
- (4) δ

Ans. [3]

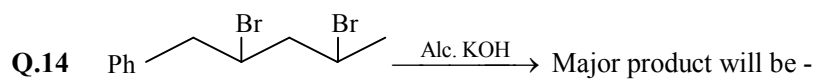


- (1)
- (2)
- (3)
- (4)

Ans. [2]

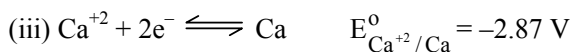
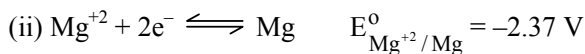


Ans. [1]



Ans. [2]

Q.15 Arrange the following in order of reducing power -



(1) $Ca > Mg > Zn > Ni$

(2) $Zn > Mg > Ni > Ca$

(3) $Mg > Zn > Ca > Ni$

(4) $Ni > Ca > Mg > Zn$

Ans. [1]

Q.16 If the enthalpy of reaction is 200 J/mol and entropy of the reaction is 40 J/mol K. Above which minimum temperature in Kelvin the process will be spontaneous -

(1) 5

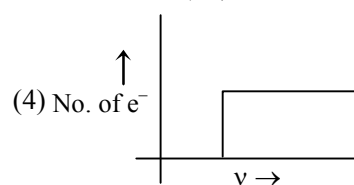
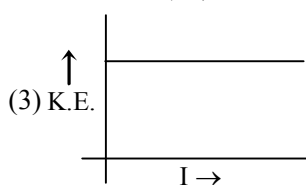
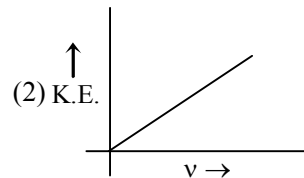
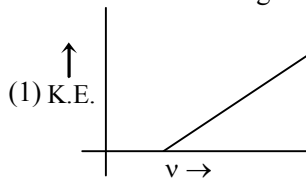
(2) 4

(3) 10

(4) 20

Ans. [1]

Q.17 Which of the following is not correct -



Ans. [2]

- Q.18** Which statement is correct -
(1) Chain growth is present in condensation polymer
(2) Step growth is present in addition polymer
(3) Nylon 6 is a example of step growth polymer
(4) Nylon 6 is a example of chain growth polymer

Ans. [3]

- Q.19** Which of the following does not use heterogeneous catalyst -
(1) Ostwald's process
(2) Combustion of coal
(3) Vegetable oil formation
(4) Haber's process

Ans. [2]

- Q.20** Which one will have the following lattice parameters $a \neq b \neq c$ and $\alpha \neq \beta \neq \gamma \neq 90^\circ$
(1) Tetragonal (2) Monoclinic (3) Triclinic (4) Hexagonal

Ans. [3]

- Q.21** (a) $N_2 + O_2 \rightleftharpoons 2NO$
(b) $N_2O_4 \rightleftharpoons 2NO_2$
(c) $N_2 + 3H_2 \rightleftharpoons 2NH_3$
If the value of RT is given as 24.3

Then $\frac{K_p}{K_c}$ is -

- (1) 1, 24.3, 1.65×10^{-3} (2) 24.3, 1, 1.65×10^{-3}
(3) 1.65×10^{-3} , 1, 24.3 (4) 1, 1.65×10^{-3} , 24.3

Ans. [1]

- Q.22** A solution is having two components A and B. If vapour pressure of pure A and B are 7×10^3 Pa and 12×10^3 Pa respectively and mole fraction of A in liquid phase is 0.4. Then mole fraction of A & B in vapour phase is -

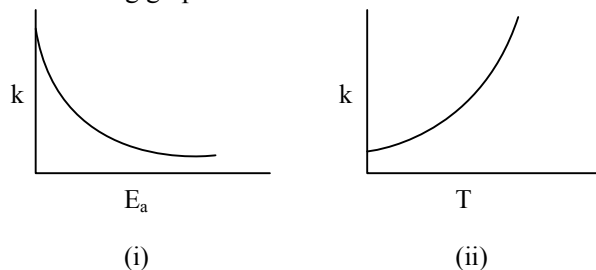
- (1) 0.36, 0.64 (2) 0.28, 0.72 (3) 0.53, 0.47 (4) 0.61, 0.39

Ans. [2]

- Q.23** For a solution of CH_2Cl_2 and H_2O which one of the following is correct -
(1) Colloidal (2) Miscible
(3) Upper layer of water is formed (4) Upper layer of CH_2Cl_2 is formed

Ans. [3]

- Q.24** Which of the following graph is correct or incorrect



- (1) (i) is true and (ii) is false (2) (i) is true and (ii) is true
(3) (i) is false and (ii) is false (4) (i) is false and (ii) is false

Ans. [1]



If 0.1 mol of Ca(OH)_2 and 1 gm Na_2SO_4 are mixed. Calculate mass of CaSO_4 formed and concentration of OH^- in the resulting mixture – (Total volume of the mixture is 100 ml)

- (1) 0.952 gm, 2M (2) 9.52 gm, 0.2M
 (3) 9.52 gm, 2M (4) 0.952 gm, 0.02M

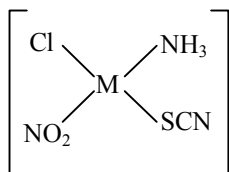
Ans. [1]

Q.26 How many isotope of hydrogen exists and how many of them are Radioactive in nature -

- (1) 2, 2 (2) 3, 3 (3) 3, 1 (4) 3, 2

Ans. [3]

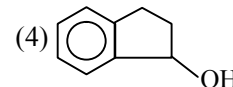
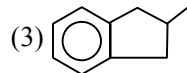
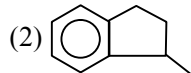
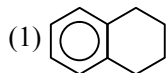
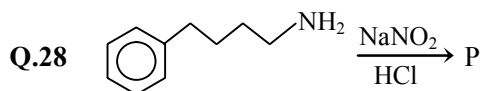
Q.27 For the square planar compound :



How many isomers are possible -

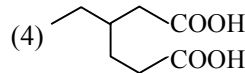
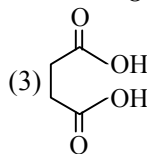
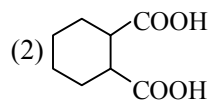
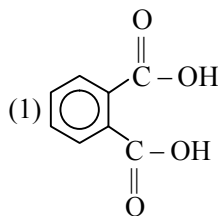
- (1) 12 (2) 16 (3) 8 (4) 4

Ans. [1]



Ans. [1]

Q.29 Which of the following will be stable on heating -



Ans. [4]