



## CHEMISTRY

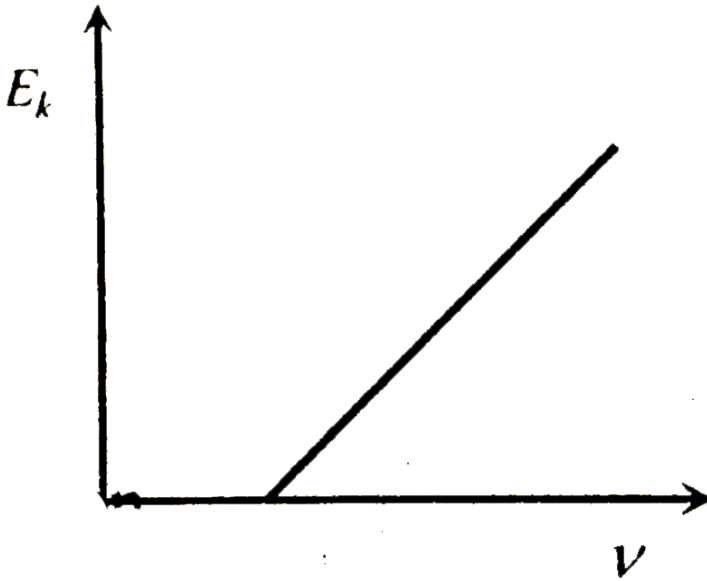
### BOOKS - NTA MOCK TESTS

#### NTA JEE MOCK TEST 84

#### Chemistry

1. For the photoelectric effect, the maximum kinetic energy  $E_k$  of the emitted photoelectrons is plotted against the frequency of the incident

photons as shown in the figure. The slope of the curve gives



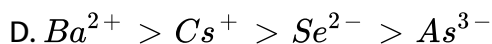
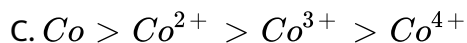
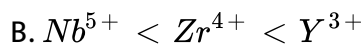
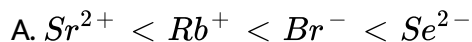
- A. charge of the electron
- B. work function of the metal
- C. Planck's constant
- D. ratio of the Planck's constant to electronic charge

**Answer: C**



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2. Incorrect order of radius is:



Answer: D



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3. What will be the volume of  $O_2$  Liberated at NTP by passing 5 A current

For 193 sec. through acidified water.

A. 56 mL

B. 112 mL

C. 158 mL

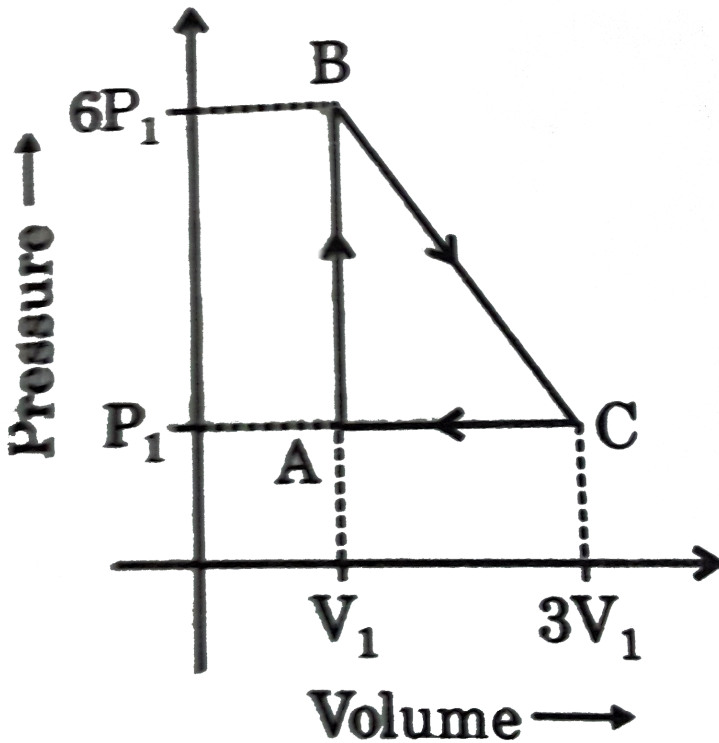
D. 965 mL

Answer: A

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4. An ideal gas is taken around the cycle ABCA as shown in P-V diagram.

The net work done by the gas during the cycle is equal to :



A.  $12P_1V_1$

B.  $6P_1V_1$

C.  $5P_1V_1$

D.  $P_1V_1$

**Answer: C**

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5.  $O_2F_2$  is an unstable yellow change solid and  $H_2O_2$  is a colourless liquid, both have  $O - O$  bond and  $O - O$  bond length in  $H_2O_2$  and  $O_2F_2$  respectively is :

A.  $1.22\text{\AA}$ ,  $1.48\text{\AA}$

B.  $1.48\text{\AA}$ ,  $1.22\text{\AA}$

C.  $1.22\text{\AA}$ ,  $1.22\text{\AA}$

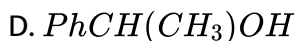
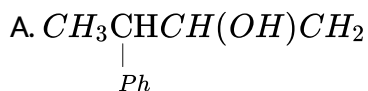
D.  $1.48\text{\AA}$ ,  $1.48\text{\AA}$

**Answer: B**



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6. Alcohol (X)  $\xrightarrow{\text{aq. NaOH} + I_2}$   $CHI_3$  + (Y)  $\xrightarrow{H_3O^+}$   $PhCH_2COOH$ . The alcohol (X) is



Answer: B



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7. An element crystallizes both in fcc and bcc lattice. If the density of the element in the two forms is the same, the ratio of unit cell length of fcc to that of bcc lattice is

A.  $(2)^{1/3}$

B.  $\left(\frac{1}{2}\right)^{1/3}$

C.  $(4)^{1/3}$

D.  $\left(\frac{1}{4}\right)^{1/3}$

**Answer: A**



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8. The CFSE for octahedral  $[CoCl_6]^{4-}$  is  $18,000\text{cm}^{-1}$ . The CFSE for tetrahedral  $[CoCl_4]^{2-}$  will be

A.  $9000\text{cm}^{-1}$

B.  $4000\text{cm}^{-1}$

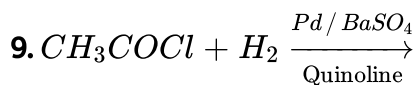
C.  $8000\text{cm}^{-1}$

D.  $2000\text{cm}^{-1}$

**Answer: C**



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- A. Acetaldehyde
- B. Propionaldehyde
- C. Acetone
- D. Acetic anhydride

**Answer: A**



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10. The vapour pressure of water at T(K) is 20 mm Hg. The following solutions are prepared at T(K)

I. 6 g of urea (molecular weight = 60) is dissolved in 178.2 g of water.

II. 0.01 mol of glucose is dissolved in 179.82 g of water.

III. 5.3 g of  $\text{Na}_2\text{CO}_3$  (molecular weight = 106) is dissolved in 179.1 g of



water.

Identify the correct order in which the vapour pressure of solutions increases

A. III lt I lt II

B. II lt III lt I

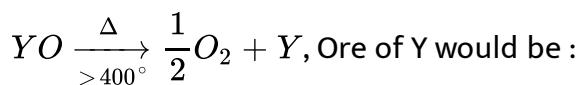
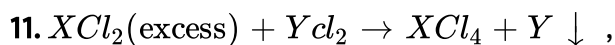
C. I lt II lt III

D. I lt III lt II

**Answer: A**



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A. Siderite

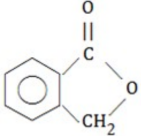
B. Cinnabar

C. Malachite

Answer: B

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12. Match list I with list II and select the correct answer using the codes given below the lists.

	List I (Reactions)	List II (Products)
(p)	$\text{CH}_2 = \text{CHCOOH} + \text{H}_2/\text{Ni} \rightarrow$	trans- 1. $\text{PhCH} = \text{CHOOH}$
(q)	cis $-\text{CH}_3\text{CH} = \text{CHCOOH} + \text{Br}_2/\text{CCl}_4 \rightarrow$	racemic-2,3- 2. dibromobutanoic acid
(r)	$\text{C}_6\text{H}_5\text{CH}(\text{OH})\text{CH}_2\text{COOH} + \text{H}^+ \xrightarrow{\Delta}$	3. $\text{CH}_3\text{CH}_2\text{COOH}$
(s)	$-\text{HOOC}-\text{C}_6\text{H}_4-\text{CH}_2\text{OH} + \text{H}^+ \xrightarrow{\Delta}$	4. 

A. (p) - 3, (q) - 4, (r) - 2, (s) - 1

B. (p) - 2, (q) - 3, (r) - 1, (s) - 4

C. (p) - 3, (q) - 2, (r) - 1, (s) - 4

D. (p) - 3, (q) - 2, (r) - 4, (s) - 1

**Answer: C**

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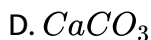
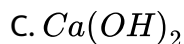
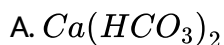
13. Which among the following reactions is can be a example of pseudo first order reaction?

- A. Inversion of cane sugar
- B. Decomposition of  $H_2O_2$
- C. Conversion of cyclopropane to propene
- D. Decomposition of  $N_2O_5$

**Answer: A**

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14. A chemical A is used for the preparation of washing soda to recover ammonia. When  $CO_2$  is bubbled through an aqueous solution of A, the solution turns milky. It is used in white washing due to disinfectant nature what is the chemical formula of A?



**Answer: C**



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15. Pick out the correct statement.

A. Both glycine and p - aminobenzoic acid form dipolar ions

B. Both sulphanic acid and p - aminobenzoic and form dipolar ions

C. Glycine does not form dipolar ion, but p - aminobenzoic acid forms dipolar ion

D. Both sulphanic acid and glycine form dipolar ions, but p - aminobenzoic acid does not form dipolar ion

**Answer: D**

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**16. Which is not true about borax?**

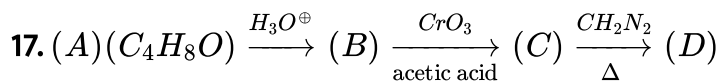
A. It is a useful primary standard for titrating against acids

B. One mole of borax contains 4  $B - O - B$  bonds

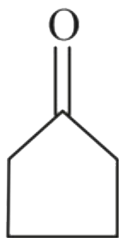
C. Aqueous solution of borax can be used as buffer

D. It is made up of two triangular  $BO_3$  units and two tetrahedral  $BO_4$  units

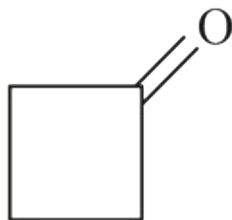
**Answer: B**



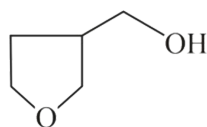
The compound 'D' is



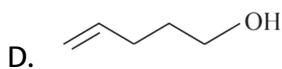
A.



B.



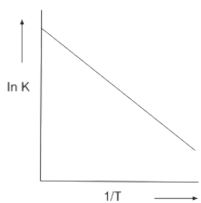
C.



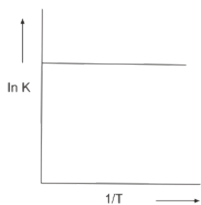
D.

Answer: A

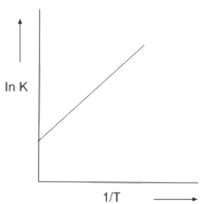
18. Which  $\ln K$  vs  $1/T$  plot is correct for an equilibrium that shifts toward reactants at higher temperatures?



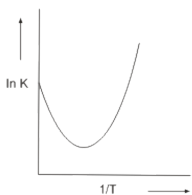
A.



B.



C.

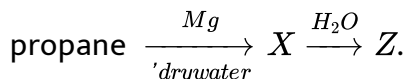


D.

**Answer: C**

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**19.** What is Z in the following sequence of reactions ? 2-methyl -2-bromo



- A. Propane
- B. 2 - methyl propene
- C. 2 - methyl propane
- D. 2 - methyl butane

**Answer: C**

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**20.** Which of the following salt on heating with solid  $K_2Cr_2O_7$  and Conc.  $H_2SO_4$  , orange red vapours are evolved which turn NaOH solution



yellow.

A.  $NaBr$

B.  $NaCl$

C.  $NaNO_3$

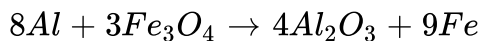
D.  $NaI$

**Answer: B**



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**21.** In the reaction



the number of electrons transferred from the reductant to the oxidant is



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22. Total number of enol possible for the compound formed during given reaction will be (including stereoisomer):

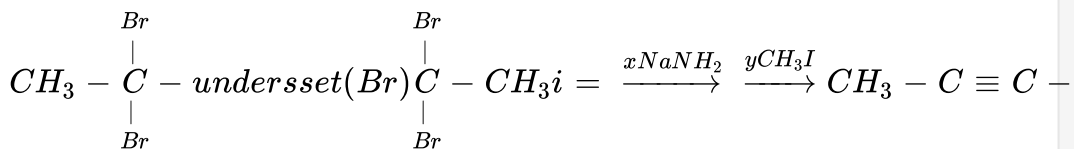


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23. Calculate pH at which an acid indicator Hin with concentration  $0.1M$  changes its colour ( $K_a$  for Hin =  $1 \times 10^{-5}$ )

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24.



x and y mole consumed .

value of x+y=

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25. Total number of covalent bonds in  $C_3O_2$  is  $x$  and  $y$  is the number of  $sp$ -hybridised atom. Find the sum of  $x + y$ ?



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