



## CHEMISTRY

### BOOKS - NTA MOCK TESTS

#### NTA JEE MOCK TEST 89

#### Chemistry

1. The  $CI - C - CI$  angle in 1, 1, 2, 2, tetrachloroethane and tetrachloromethane respectively will be about:

A.  $109.5^\circ$  and  $90^\circ$

B.  $120^\circ$  and  $109.5^\circ$

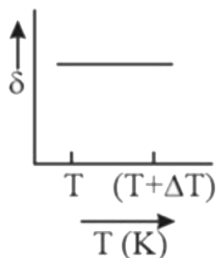
C.  $90^\circ$  and  $109.5^\circ$

D.  $109.5^\circ$  and  $120^\circ$

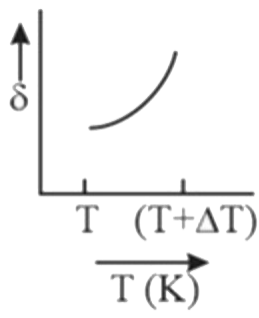
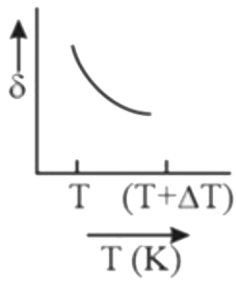
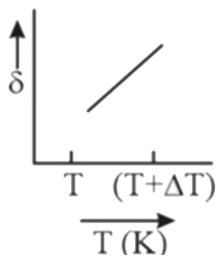
**Answer: B**

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2. An ideal gas is initially at temperature  $T$  and volume  $V$ . Its volume is increased by  $\Delta V$  due to an increase in temperature  $\Delta T$ , pressure remaining constant. The quantity  $\delta = \frac{\Delta V}{V\Delta T}$  varies with temperature as



A.



Answer: C

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3. When photons of energy  $4.25\text{eV}$  strike the surface of a metal A, the ejected photoelectrons have maximum kinetic energy,  $T_A$  (expressed in eV) and deBroglie wavelength  $\lambda_A$ . The maximum kinetic energy of photoelectrons liberated from another metal B by photons of energy  $4.20\text{V}$  is  $T_B = T_A - 1.50\text{eV}$ . If the deBroglie wavelength of those photoelectrons is  $\lambda_B = 2\lambda_A$  then

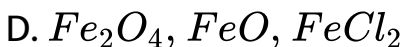
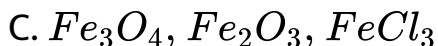
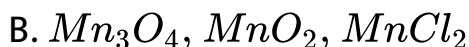
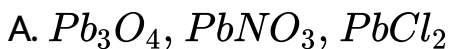
- A. The work function of A is  $2.25\text{ eV}$
- B. The work function of B is  $3.70\text{ eV}$
- C.  $T_A = 2.00\text{eV}$
- D.  $T_B = 2.75\text{eV}$

**Answer: D**



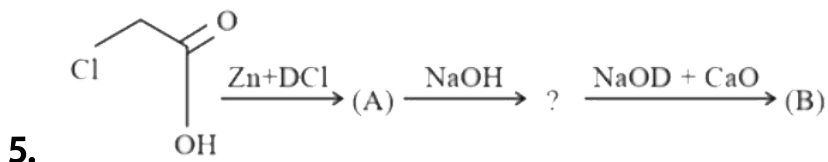
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4. A red coloured mixed oxide (X) on treatment with conc.  $HNO_3$  gives a compound (Y). (Y) with HCl produces a chloride (Z) which is insoluble in cold water but soluble in hot water, (Z) can also be formed by treating (X) with conc. HCl. Compounds (X), (Y) and (Z) are :



**Answer: A**





The Compound (A) and (B) in the equation given above are

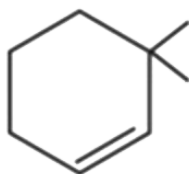
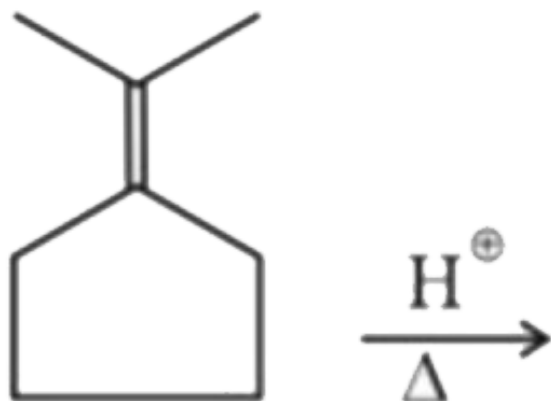
- A.  $\text{CH}_3\text{COOH}$ ,  $\text{CH}_3\text{CH}_3$
- B.  $\text{DCH}_2 - \text{COOD}$ ,  $\text{CH}_4$
- C.  $\text{DCH}_2 - \text{COOH}$ ,  $\text{CH}_2\text{D}_2$
- D.  $\text{CH}_3 - \text{COOH}$ ,  $\text{CH}_3\text{D}$

**Answer: C**

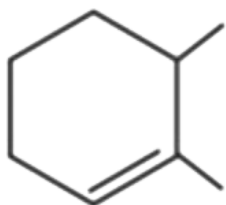


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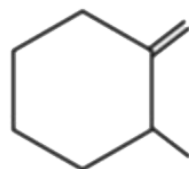
6. Product of the following reaction is



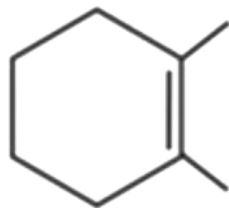
A.



B.



C.



D.

**Answer: D**

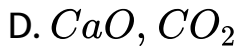
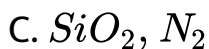
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7. An inorganic compound (X) made up of two most occurring elements in the earth's crust and used in building construction . When (X ) reacts with carbon . It forms a poisonous gas (Y) which is most stable diatomic molecule . Identify compounds (X ) and (Y) .

A.  $SiO_2, CO_2$

B.  $SiO_2, CO$





**Answer: B**

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8. If  $P^\circ$  and  $P_S$  are the vapour pressure of the solvent and solution respectively,  $n_1$  and  $n_2$  are the mole fractions of the solvent and solute respectively, then:

A.  $P_S = P^0 n_1$

B.  $P_S = P^0 n_2$

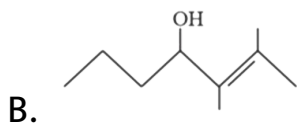
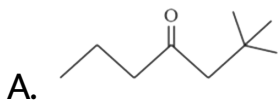
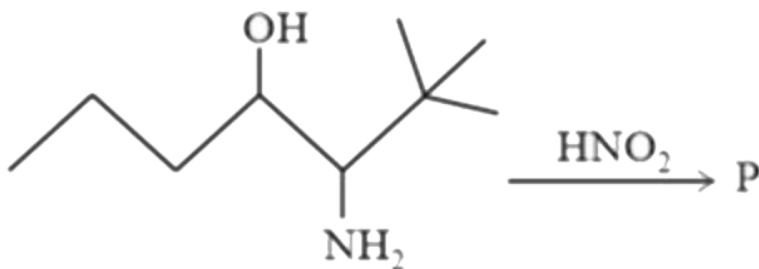
C.  $P^0 = P_S n_2$

$$D. P_S = P^0 \left( \frac{n_1}{n_2} \right)$$

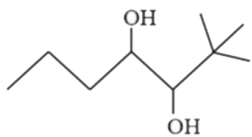
Answer: A

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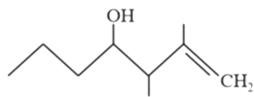
9. Predict the major product P in the following reaction.



C.



D.



**Answer: A**

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10. Compounds (*A*) and *B* are treated with dilute  $HCl$  separately. The gases liberated are *Y* and *Z* respectively. *Y* turns acidified  $K_2Cr_2O_7$  paper green while *Z* turns lead acetate paper black. The compounds *A* and *B* are respectively :

A.  $NaCl$  and  $Na_2CO_3$

B.  $Na_2S$  and  $Na_2S$

C.  $Na_2S$  and  $Na_2SO_3$

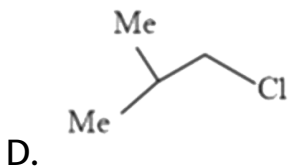
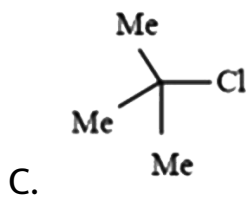
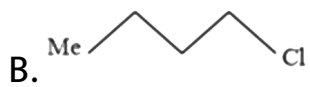
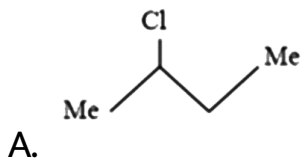
D.  $Na_2SPO_3$  and  $Na_2SO_4$

**Answer: B**



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11. Equal amount of an  $RCl(C_4H_9Cl)$  is reacted at the same temperature with equal volume of  $0.2M$  and  $0.4M$  solution of  $KOH$ , respectively, in two separate experiments. The time taken for the reaction of 50% of  $(C_4H_9Cl)$  was found to be same, the alkyl halide is :

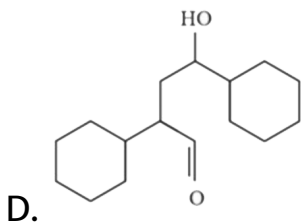
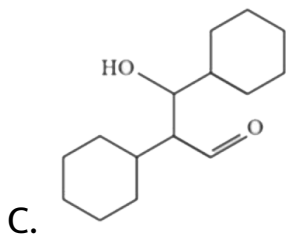
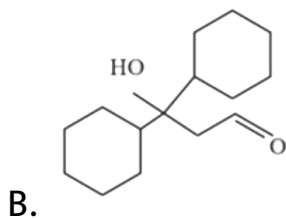
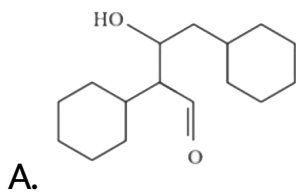
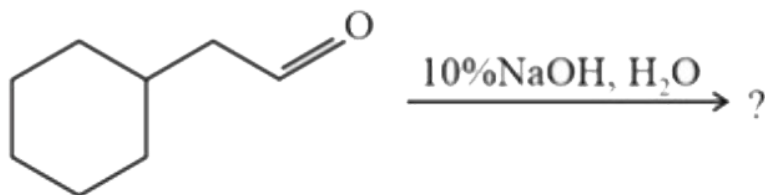


**Answer: B**



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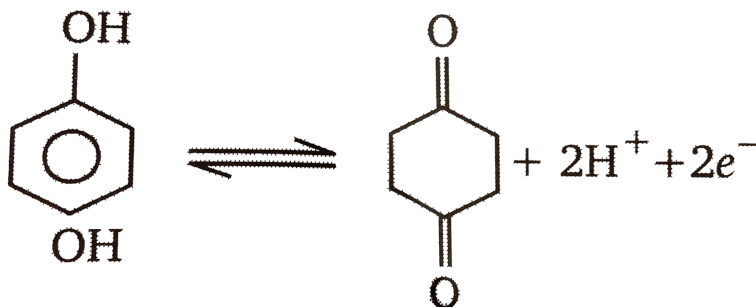
12. What is the product of the following reaction?



Answer: A

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13. At  $pH = 2$ ,  $E^\circ_{(\text{Quinhydrone})} = 1.30V$ ,  $E_{\text{Quinhydrone}}$  will be :



A. 1.36 V

B. 1.32 V

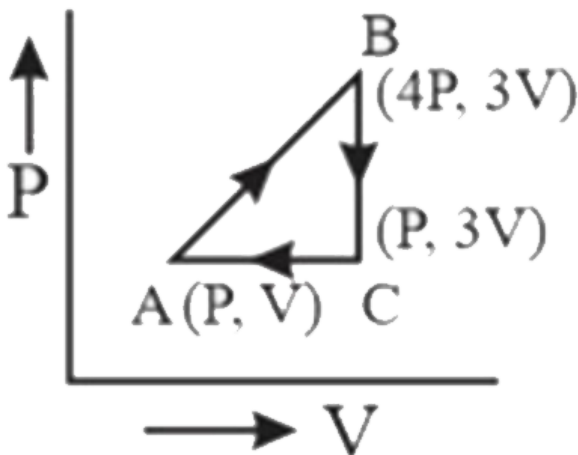
C. 1.42 V

D. 1.26 V

Answer: C

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14. The net work done through a series of changes reported is figure at the end of cycle for an ideal gas is equal to





A. zero

B.  $-5PV$

C.  $-3PV$

D.  $-2PV$

**Answer: C**



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**15.** A solid AB has *NaCl* type structure with edge length 580.4 pm. Then radius of  $A^+$  is 100 pm. What is the radius of  $B^-$  in pm?

A. 190.2

B. 540.13

C. 525

D. 78.12

**Answer: A**

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**16.** The number of geometrical isomers of  $[Co(NH_3)_3(NO_2)_3]$  are

A. 4

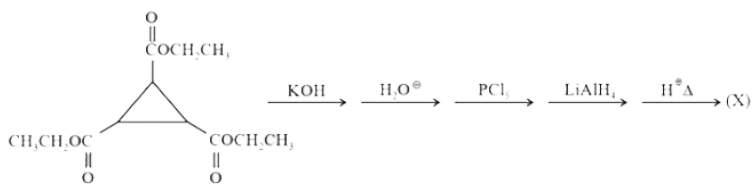
B. 3

C. 2

D. 0

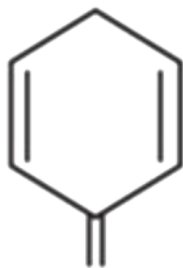
Answer: C

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17. Product (X) is

Product (X) is



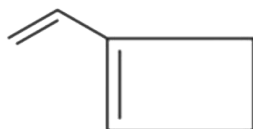
A.



B.



C.



D.

**Answer: B**

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**18.** Euchlorine is

A. obtained by heating perchlorate with conc. *HCl*

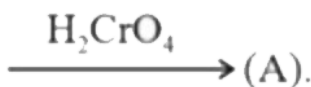
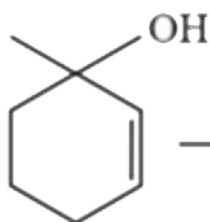
B. a chloride europium

C. a mixture of  $Cl_2$  and  $Cl_2O_7$

D. a mixture of  $Cl_2$  and  $ClO_2$

**Answer: D**

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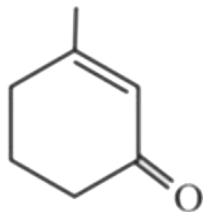
Product (A) is

19.

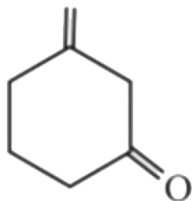
Product

(A) is

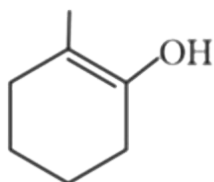
A. No reaction



B.



C.



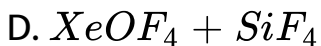
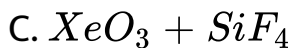
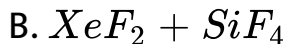
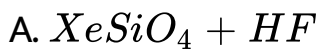
D.

**Answer: B**



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20. What are the products formed in the reaction of xenon hexa fluoride with silica?



**Answer: D**

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21. At  $380^\circ C$  half-life period for the first order decomposition of  $H_2O_2$  is 360 min. The energy of activation of the reaction is  $200\text{kJ}\cdot\text{mol}^{-1}$ . Calculate the time required for 75% decomposition at  $450^\circ C$ .

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22. An aqueous solution of a metal bromide  $MBr_2(0.05M)$  is saturated with  $H_2S$ . What is the minimum pH at which MS will precipitate?  $K_{sp}$  for Ms =  $6.0 \times 10^{-21}$  Concentration of saturated  $H_2S = 0.1M$ ,  $K_1 = 10^{-7}$  and  $K_2 = 1.3 \times 10^{-13}$  for  $H_2S$ .

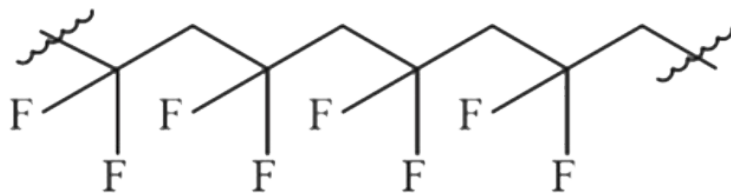
[Report your answer by rounding it upto nearest whole number]



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23. The following chain - growth polymer is made up of how many difluoroethylene monomer units?





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24. How many O - atoms are present in Equanil.

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25. Find out the % of oxalate ion in given sample of oxalate salt of which 0.3 g is present in 100 mL of solution required 90 mL.  $N/20KMnO_4$  for complete oxidation.

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