



## CHEMISTRY

### BOOKS - NTA MOCK TESTS

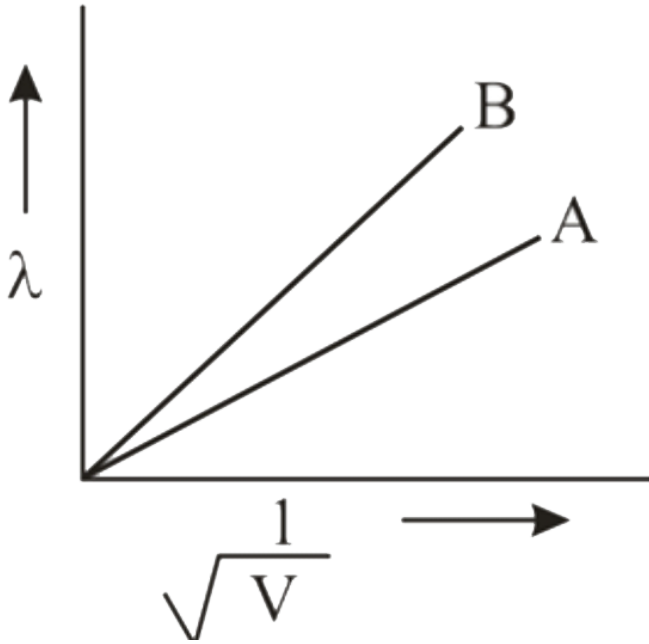
#### NTA NEET TEST 98

#### Chemistry

1. de Broglie wavelengths of two particles A and B are plotted against  $\left(\frac{1}{\sqrt{V}}\right)$ , where V is the potential on the particles.

Which of the following relation is correct about the mass of the

particles ?



A.  $m_A = m_B$

B.  $m_A > m_B$

C.  $m_A < m_B$

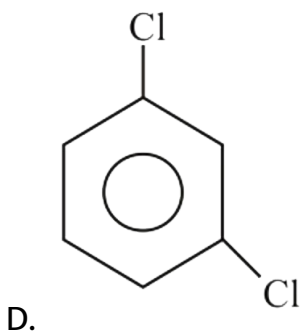
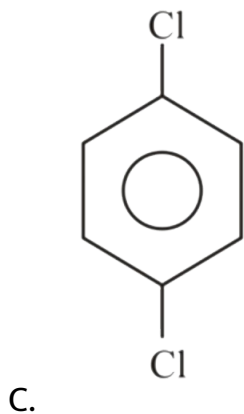
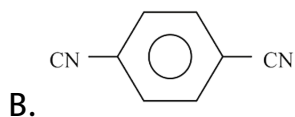
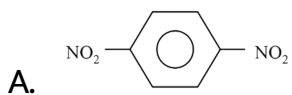
D.  $m_A \leq m_B$

**Answer: B**



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2. Which of the following compounds would you expect to have a dipole moment ?

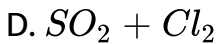
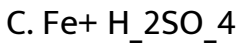
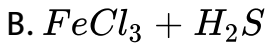
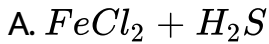


**Answer: D**



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**3.** In which of the following processes colloidal sulphur is formed



**Answer: B**



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**4.** Which of the following weights the least ?

A. 24 g of Mg

B. 0.9 mol of NO

C. 22.4 of  $N_2$

D.  $6.02 \times 10^{24}$  molecules of oxygen

**Answer: A**



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5. Which of the following will have highest bond energy ?

A.  $F_2$

B.  $N_2$

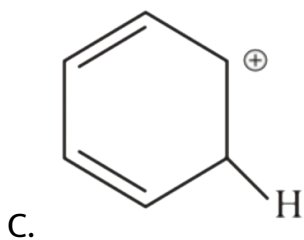
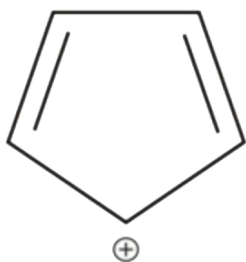
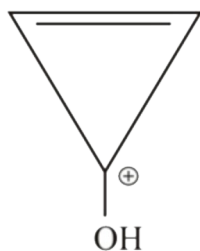
C.  $F_2^-$

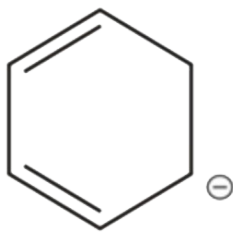
D.  $O_2^-$

Answer: B

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6. Which one of the following ion is aromatic ?





D.

**Answer: D**

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7. A gas cylinder containing cooking gas can withstand a pressure of 14.9 atmosphere. The pressure gauge of the cylinder indicates 12 atmosphere at  $27^{\circ}C$ . Due to a sudden fire in the building the temperature starts rising. At what temperature will the cylinder explode ?

A. 372.5 K

B. 3.725 K

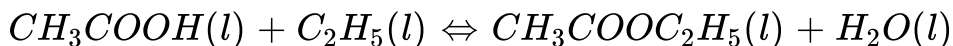
C. 37.25 K

D. None of these

**Answer: A**

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8. For the reaction



the value of equilibrium constant (K) is 4 at 298 K. The standard free energy change ( $\Delta G^\circ$ ) is equal to

A.  $3.473\text{kJ mol}^{-1}$

B.  $-34730\text{kJ mol}^{-1}$

C.  $34730\text{kJ mol}^{-1}$

D.  $-3.434\text{kJ mol}^{-1}$

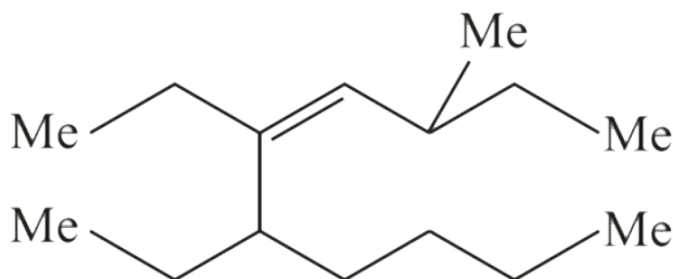
**Answer: D**





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9. The IUPAC name of the following compound is



- A. 5,6- diethyl -3- methyldec -4- ene
- B. 5,6- diethyl -8- methyldec -6- ene
- C. 5,6- dimethyl -8- methyldec -6- ene
- D. 5,6- dimethyl -3- methyldec -4- ene

**Answer: A**



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10. Atoms of elements  $B$  form hcp lattice and those of element  $A$  occupy two-thirds of tetrahedral voids. What is the formula of the compound formed by elements  $A$  and  $B$ ?



**Answer: A**



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11. Number of structural isomers of  $C_4H_{10}O$  that are ethers are

A. 1

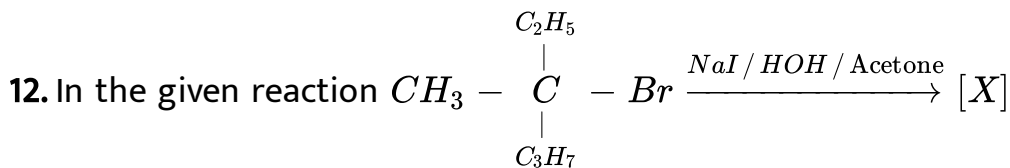
B. 2

C. 3

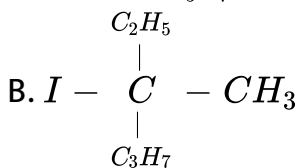
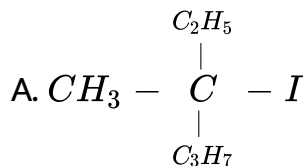
D. 4

Answer: C

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[X] will be



C. Mixture of A and B

D. None of these

**Answer: C**

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13. Which of the following statement is not applicable to  $H_2SO_4$  ?

- A. The molecules are associated by H - bonds
- B. Oxidation state of S is +6
- C. The hybrid state of S and O atoms of OH groups is same
- D. The acid always exhibits a basicity of two

**Answer: D**

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14. The half life period for catalytic decomposition of  $XY_3$  at 100 mm is found to be 8 hrs and at 200 mm it is 4 hrs. The order of reaction is

A. 3

B. 2

C. 4

D. None of these

**Answer: B**



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15. The sodium salt of a weak acid is hydrolysed to the extent of 3% in 0.1 M solution in water at  $25^\circ C$ . If  $K_a$  for weak acid is  $1.3 \times 10^{-10}$ . The ionic product of water is

A.  $1.17 \times 10^{-14}$

B.  $1.17 \times 10^{14}$

C.  $11.7 \times 10^{-14}$

D.  $11.7 \times 10^{-10}$

**Answer: A**



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**16.** Consider the following compounds (1)  $C_6H_5 - NH - CH_3$

(2)  $C_6H_5 - NH - C_6H_5$  (3)  $(C_6H_5)_3N$  (4)  $CH_3 - CH_2 - NH_2$

write the basicity order

A.  $1 > 2 > 3 > 4$

B.  $4 > 1 > 2 > 3$

C.  $3 > 2 > 1 > 4$

D.  $4 > 3 > 2 > 1$

**Answer: B**

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17. The concentration aqueous solution of potassium salts of acetic acid and propanoic acid are electrolysed. Which of the following hydrocarbons is/are produced ?

A.  $CH_3CH_3$  only

B.  $CH_3CH_2CH_3$  only

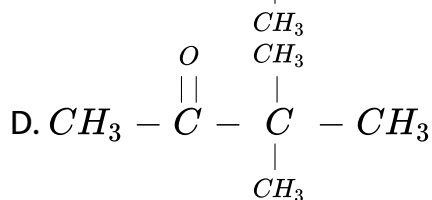
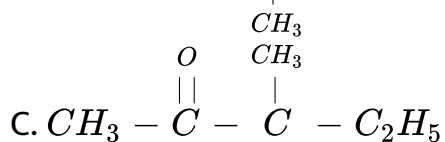
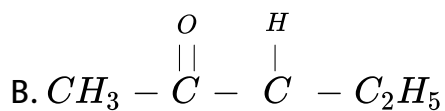
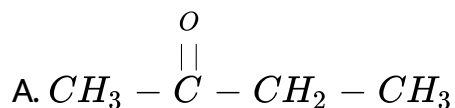
C.  $CH_3CH_3$  and  $CH_3CH_2CH_2CH_3$

D.  $CH_3CH_2CH_2CH_3$  and  $CH_3CH_2CH_3$

**Answer: C**

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18. Which of the following carbonyl compounds will give recemisation reaction in the presence of acid base ?



Answer: B

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19. Which transition metal has lowest density ?

A. Sc

B. Ti

C. Zn

D. La

**Answer: A**



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20. A certain quantity of electricity deposits 0.54 g of Ag from silver nitrate solution. What volume of hydrogen will be liberated by the same quantity of electricity at  $27^{\circ}C$  and 750 mm of Hg pressure ?

A. 62.34 ml

B. 6.234 ml

C. 623.5 ml

D. None of these

**Answer: A**



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

List - I

(*p*) Nucleic acids

(*q*) Uracil

(*r*) Thymine

(*s*) Double - helix structure

List - II

1. *DNA*

2. Hormones

3. Polynucleotides

4. RNA

A. (*p*) – 4, (*q*) – 3, (*r*) – 1, (*s*) – 1

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

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

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

**Answer: B**



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22. The equivalent conductance of a 0.2 n solution of an electrolyte was found to be  $200\Omega^{-1}cm^2eq^{-1}$ . The cell constant of the cell is  $2cm^{-1}$ . The resistance of the solution is

A.  $50\Omega$

B.  $400\Omega$

C.  $100\Omega$

D. None of these

**Answer: A**



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**23.** Which of the following pairs of elements show diagonal relationship ?

1. Li and Mg 2. B and Si 3. Mg and Al Select the correct answer using the codes given below

A. 1 and 3

B. 2 and 3

C. 1 and 2

D. 1,2 and 3

**Answer: C**



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24. A graph showing variation of osmotic pressure ( $\pi$ ) versus molar concentration 'C' of an aqueous solution at temperature T is given below



The slope of the line represents

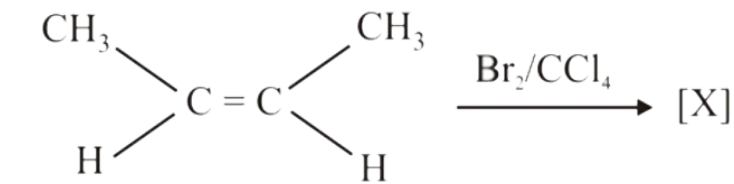
- A. solution constant R
- B. absolute temperature T
- C. RT
- D. degree of ionization of solute

**Answer: C**



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25. In the given reaction



[X] will be

[X] will be

- A. Erythro -2,3-dibromobutane
- B. Threo-2,3- dibromobutane
- C. 1 : 1 mixture of Erythro -2,3-dibromo butane and threo -2,3-dibromobutane
- D. 2 : 1 mixture of erythro-2,3- diromobutane and threo -2,3-dibromobutane

**Answer: B**



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26. How will you convert butan -2-one to propanoic acid ?

A. Tollen's reagent

B. Fehling's solution

C.  $NaOH + I_2, H^+$

D.  $NaOH + NaI, H^+$

**Answer: C**



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27. The standard molar enthalpies of formation of cyclohexane (l) and benzene (l) at  $25^\circ C$  are  $-156$  and  $+49 \text{ KJ mol}^{-1}$  respectively.

The standard enthalpy of hydrogenation of cyclo hexene (l) at

$25^{\circ}\text{C}$  is  $-116\text{KJ mol}^{-1}$ . Use these data to estimate the magnitude of the resonance energy of benzene.

A.  $-143\text{KJ mol}^{-1}$

B.  $1.52\text{kJ mol}^{-1}$

C.  $15.2\text{kJ mol}^{-1}$

D. None of these

**Answer: A**



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28. Poling process is used for

A. The removal of  $\text{CuO}$  from  $\text{Cu}$

B. The removal of  $\text{Al}_2\text{O}_3$  from  $\text{Al}$



C. The removal of  $Fe_2O_3$  from Fe

D. All of these

**Answer: A**



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**29.** The vapour pressure of benzene at  $90^\circ C$  is 1020 torr. A solution of 15 g of a solute in 58.8 g benzene has a vapour pressure of 990 torr. The molecular weight of the solute is

A. 78.2

B. 204.2

C. 148.2

D. 676.53

**Answer: D**

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**30.** What is the % dissociation of  $H_2S$  if 1 "mole" of  $H_2S$  is introduced into a 1.10L vessel at 1000K?  $K_c$  for the reaction  $2H_2S(g) \rightleftharpoons 2H_2(g) + S_2(g)$  is  $1 \times 10^{-6}$

A. 1.3 %

B. 0.13 %

C. 13 %

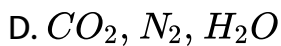
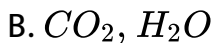
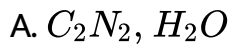
D. None of these

**Answer: A**

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The products of above reaction are



**Answer: A**



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32. Consider the following statements

1.  $Cs^+$  ion is more highly hydrated than other alkali metal ions
2. Among the alkali metals Li, Na, K and Rb, Lithium (Li) has the highest melting point

3. Among the alkali metals , only lithium form a stable nitride by direct combination .

O these statements

A. 1,2 and 3 are correct

B. 1 and 2 are correct

C. 1 and 3 are correct

D. 2 and 3 correct

**Answer: D**

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**33.** The root mean square velocity of an ideal gas in a closed container of fixed volume is increased from  $5 \times 10^4 \text{ cm s}^{-1}$  to  $10 \times 10^4 \text{ cm s}^{-1}$ . Which of the following statements correctly explains how the change is accomplished?

- A. By heating the gas, the temperature is doubled
- B. By heating the gas, the pressure is quadrupled
- C. By heating the gas, volume is tripled
- D. By heating the gas, the pressure is doubled

**Answer: B**

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**34.** A gaseous reaction  $X_2(g) \rightarrow Z(g) + \frac{1}{2}Y(g)$  shows increase in pressure from 150 mm to 170 mm in 10 minutes. The rate of disappearance of  $X_2$  is

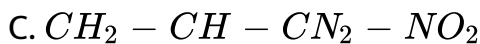
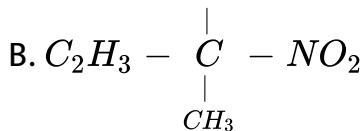
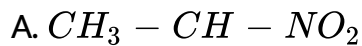
- A.  $4\text{mm min}^{-1}$
- B.  $16\text{mm min}^{-1}$
- C.  $8\text{mm min}^{-1}$

D.  $2\text{mm min}^{-1}$

**Answer: A**

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**35.** Which one of the following nitroalkanes will give nitrolic acid with  $\text{NaNO}_2 / \text{conc. H}_2\text{SO}_4$



D. All of the above

**Answer: C**



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36. Unknown compound A  $C_9H_8O_5$  on methylation with  $(CH_3)SO_4 / NaOH$  forms methyl derivative whose MW is 210.

The number of hydroxyl groups in A is

- A. five
- B. four
- C. one
- D. three

**Answer: C**

37. Consider the  $M(OH)_3$  formed by all the group 13 elements.

The correct sequence of acidic strength of hydroxides

$[M(OH)_3]$  is-

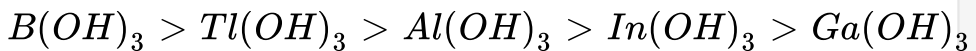
A.



B.



C.



D.



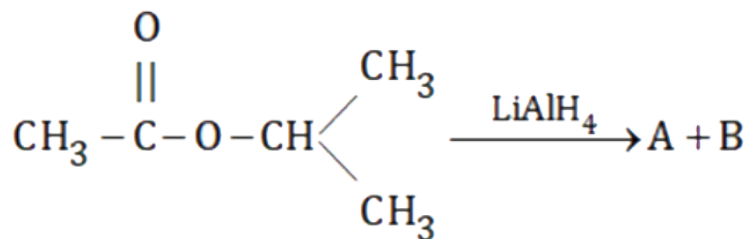
**Answer: A**



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38. In the reaction

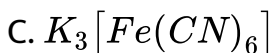
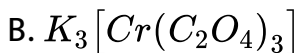
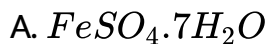


- A. A will give haloform
- B. B will give haloform
- C. Both A and B will give haloform
- D. Both A and B will not give haloform

**Answer: C**

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39. Which one of the following can shown optical isomerism ?



Answer: B



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40. Pick out incorrect statement.

A.  $NF_3$  molecule has trigonal pyramidal structure

B.  $NF_3$  is practically insoluble in water and is only hydrolyzed

, when an electric spark is passed through a mixture with

water vapour

C. Dipole moment of  $NF_3$

D. Nitrogen (III) oxide ( $N_2O_3$ ) is an acidic oxide

**Answer:**

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41. Which of the following compounds liberates dihydrogen gas at anode when it is electrolysed in molten state but the same gas is liberated at cathode if its aqueous solution is electrolysed ?

A. NaCl

B. NaH

C.  $PH_4I$

D.  $CuSO_4$

**Answer: B**

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42. The standard reduction potential for  $Cu^{2+} / Cu$  is  $+0.34V$ .

Calculate the reduction potential at  $pH=14$  for the above couple.

$K_{SP}$  of  $Cu(OH)_2$  is  $1.0 \times 10^{-19}$

A.  $-0.22V$

B.  $-0.34V$

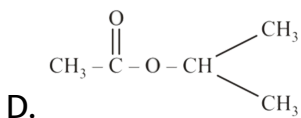
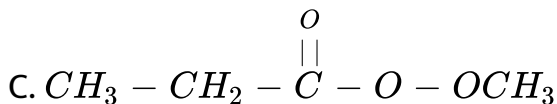
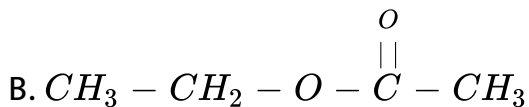
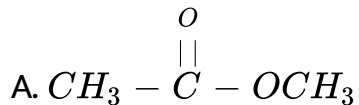
C.  $+0.22V$

D.  $+0.34V$

**Answer: A**

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43. Sodium salt of acetic acid reacts with ethyl iodide to give

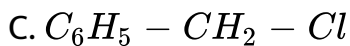
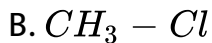
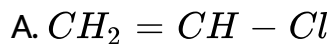


Answer: B



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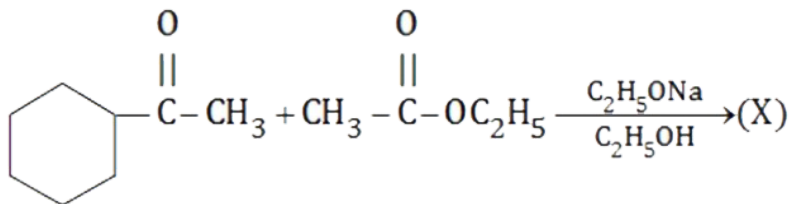
44. The C-Cl bond length is shortest in :



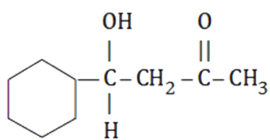
**Answer: A**

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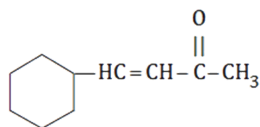
45. In the given reaction



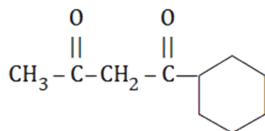
(X) will be



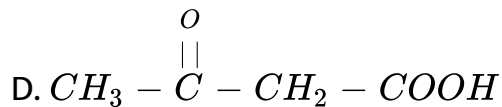
A. \_\_\_\_\_



B.



C.



**Answer: C**

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