

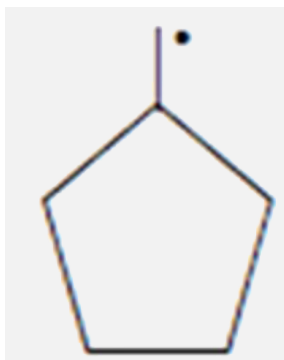
CHEMISTRY

BOOKS - NTA MOCK TESTS

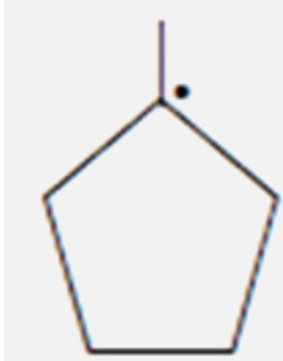
NTA NEET TEST 112

Chemistry

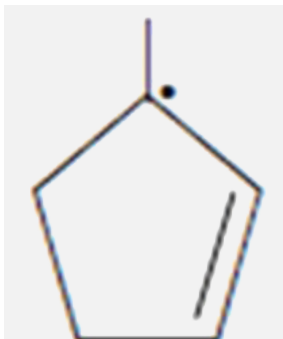
1. Which among the following free radicals is most stable



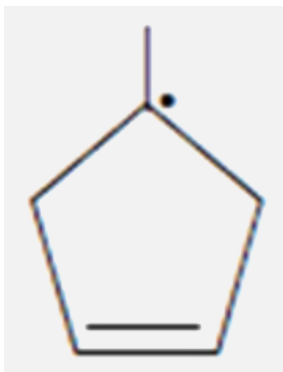
B.



C.



D.



Answer: C



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2. Compare bond angle from the following molecules



A. $x > y$

B. $y > x$

C. $x = y$

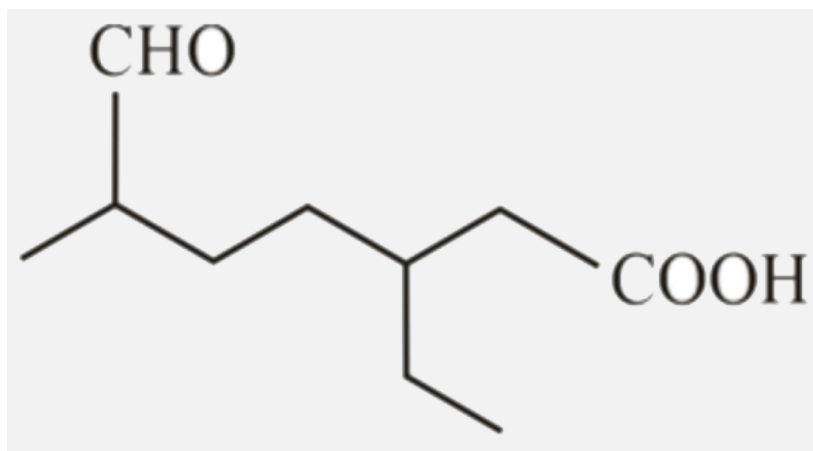
D. None of these

Answer: A



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3. The correct IUPAC name of the compound given below is

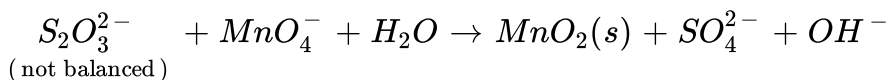


- A. 3-ethyl-6-formylheptanoic acid
- B. 3-ethyl-6-methyl-7-oxoheptanoic acid
- C. 3-ethyl-6-methyl hepten-7-aloic acid
- D. 5-ethy-2-methyl-1-oxoheptanoic acid

Answer: B

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4. $0.1M KMnO_4$ is used for the following titration. What volume of the solution in mL will be required to react with 0.158 g of $Na_2S_2O_3$?



- A. 1.7ml
- B. 0.17ml
- C. 17ml
- D. 1.07ml

Answer: C

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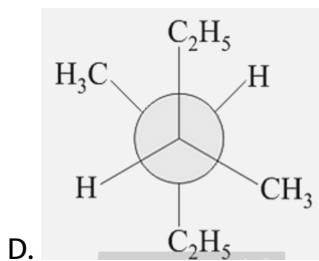
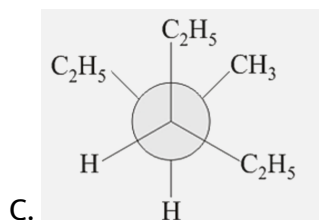
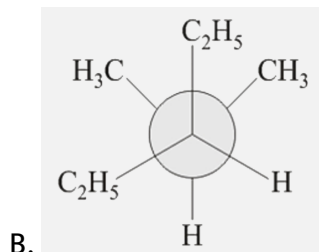
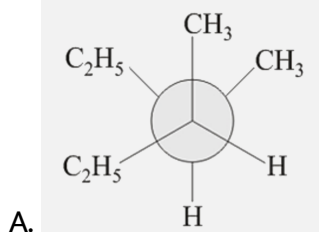
5. Which of the following does not illustrate the anomalous behaviour of lithium ?

- A. Lithium reacts with nitrogen to form a nitride
- B. Lithium is the hardest alkali metal
- C. Lithium reacts with oxygen to form normal oxide only
- D. Li_2CO_3 decomposes on heating

Answer: B

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6. Which is the most stable conformation of 3,4-dimethylhexane?



Answer: D

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7. Under what conditions will a pure sample of an ideal gas not only exhibit a pressure of 1 atm but also a concentration of 1 mol litre^{-1}

$$[R = 0.082 \text{ litre atm mol}^{-1} \text{ K}^{-1}]$$

- A. At STP
- B. When $V = 22.4$ litre
- C. When $T = 12\text{ K}$
- D. Impossible under any condition

Answer: C



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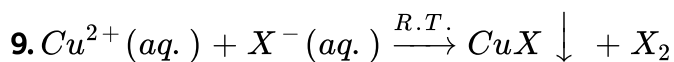
8. Propyne reacts with Br_2 / HOH to produce

- A. 1,1,2,2-Tetrabromopropane
- B. Acetone
- C. Acetaldehyde

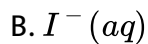
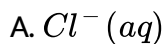
D. α - Bromoacetone

Answer: D

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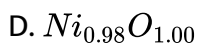
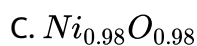
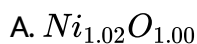
'X' cannot be:



Answer: A

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10. Analysis show that nickel oxide consists of nickel ion with 96 % ions having d^8 configuration and 4 % having d^7 configuration. Which amongst the following best represents the formula of the oxide?



Answer: D



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11. Which gaseous product is formed when a mixture of iron (II) sulphate and potassium nitrate is heated with dilute H_2SO_4 ?



C. mixture of NO_2 and N_2O_4

D. N_2O_5

Answer: A

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12. Phenol is a colourless liquid but on keeping it in air for long time it converts into brown colour due to

A. Air oxidation into p-benzoquinone

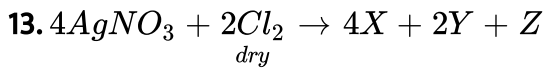
B. Air oxidation into quinol

C. Air oxidation into o-benzoquinone

D. Air oxidant into m-benzoquinone

Answer: A

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In the above sequence of reaction y and z are respectively.

A. NO_2 and N_2O_4

B. N_2O_5 , O_2

C. $AgCl$ and O_2

D. $AgCl$, N_2

Answer: B



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14. N_2O_4 is dissociated to 33 % and 40 % at total pressure P_1 and P_2 atm respectively. Then the ratio P_1/P_2 is

A. $7/4$

B. $7/3$

C. $8/3$

D. 8/5

Answer: D



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15. How much of $0.3M NH_4OH$ should be mixed with $30mL$ of $0.2M$ solution of NH_4Cl to give a buffer solution of $pH 8.65$?

A. 2 mL

B. 3 mL

C. 5 mL

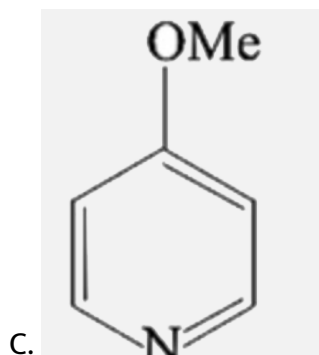
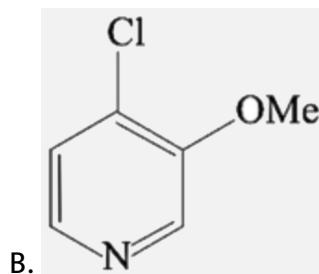
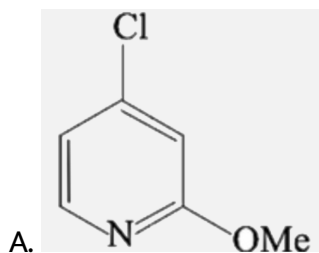
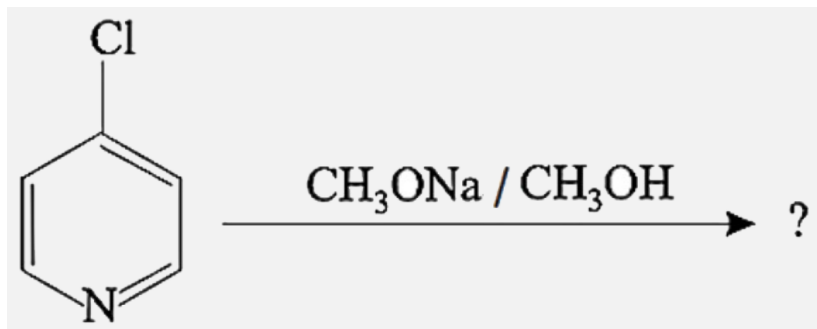
D. 7 mL

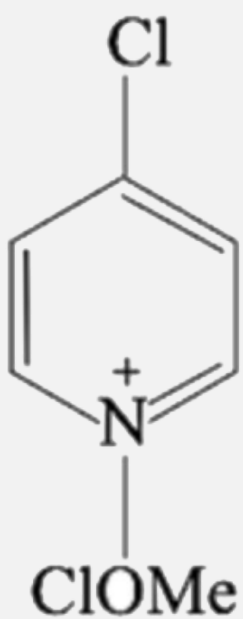
Answer: C



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16. What is the major organic product of the reaction ?





D.

Answer: C

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17. Calculate the Effective Atomic number of Mn is $Mn_2(CO)_{10}$.

A. 36

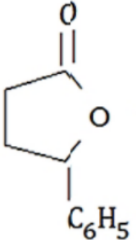
B. 35

C. 72

Answer: A

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18. Match List I with List II and select the correct answer using the codes given below the lists

	List I	List II
P.	$\text{CH}_3\text{COOC}_2\text{H}_5 \rightarrow \text{CH}_3\text{COCH}_2\text{COOC}_2\text{H}_5$	1. Anhy. AlCl_3
Q.	 $\rightarrow \text{CH}_2\text{OH} - (\text{CH}_2)_2 - \text{CHOH} - \text{C}_6\text{H}_5$	2. LiAlH_4
R.	$\text{C}_6\text{H}_5\text{CH}_2\text{COOH} \rightarrow \text{C}_6\text{H}_5 - \overset{\text{Br}}{\underset{ }{\text{CH}}} - \text{COOH}$	3. $\text{C}_2\text{H}_5\text{ONa}$
S.	$\text{C}_6\text{H}_6 + \text{CH}_3\text{COCl} \rightarrow \text{C}_6\text{H}_5\text{COCH}_3$	4. P/Br_2

A. P - 3, Q - 2, R - 1, S - 4

B. P - 3, Q - 2, R - 4, S - 1

C. P - 1, Q - 2, R - 3, S - 4

D. P - 4, Q - 3, R - 2, S - 1

Answer: B

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19. Kinetic energy and pressure of a gas of unit volume are related as:

A. $P = \frac{2}{3}U$

B. $P = \frac{3}{2}U$

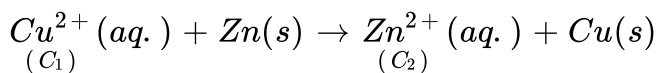
C. $P = \frac{U}{2}$

D. $P = 2U$

Answer: A

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20. For the cell reaction,



the change in free energy (ΔG) at a given temperature is a function of:

- A. $\ln C_1$
- B. $\ln(C_2 / C_1)$
- C. $\ln(C_1 + C_2)$
- D. $\ln C_2$

Answer: B



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21. $ThC - O - O$ bond angle in the ether molecule is

- A. 111°
- B. 90°

C. 180°

D. 109°

Answer: A

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22. Hydrogen atoms are excited on $n=4$ state. In the spectrum of emitted radiation, number of lines in the ultraviolet and visible regions are respectively-

A. 3 : 1

B. 1 : 3

C. 2 : 3

D. 3 : 2

Answer: D

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23. When MnO_2 is strongly heated to get oxygen gas, the oxidation number of Mn changes from + 4 to ?

A. 0

B. +1

C. $+\frac{8}{3}$

D. +2

Answer: C



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24. The freezing point of a 3% (by weight) aqueous solution of A is equal to the freezing point of 9% (by weight) aqueous solution of B . If the molecular weight of A is 60, then the molecular weight of B will be
a.180 , b.90 , c.45 , d.20

A. 180

B. 45

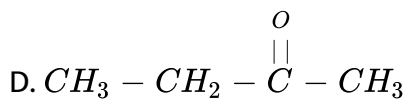
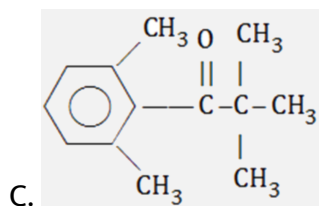
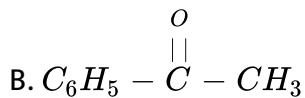
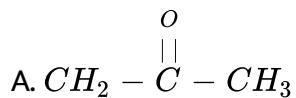
C. 90

D. 20

Answer: A

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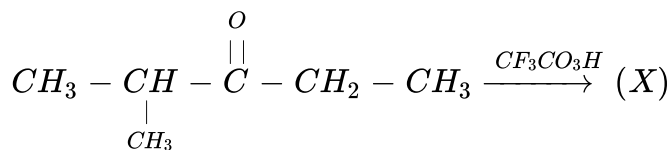
25. Which of the following ketone does not react with CH_3MgBr ?



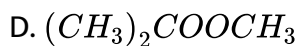
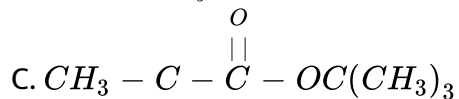
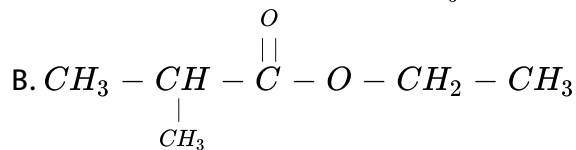
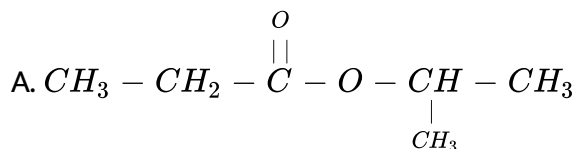
Answer: C

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26. In the given reaction,



as main product, 'X' will be



Answer: A

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27. A solution of 200mL of 1MKOH is added to 200mL of 1MHCl and the mixture is well shaken. The rise in temperature T_1 is noted. The experiment is repeated by using 100mL of each solution and increase in temperature T_2 is again noted. Which of the following is correct?

- A. $T_1 = T_2$
- B. T_2 twice as large as T_1
- C. T_1 is twice as large as T_2
- D. T_1 is four times as large as T_2

Answer: A



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28. The compound $\text{H}_2\text{N} - \text{Hg} - \text{O} - \text{Hg} - \text{I}$ is formed by the action of

- A. NH_3 and HgO in the presence of iodine
- B. NI_3 , HgO and H_2O



Answer: C

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29. The value of Λ_{eq}^{∞} for NH_4Cl , $NaOH$ and $NaCl$ are 149.74, 248.1 and $126.4\Omega^{-1}cm^2\text{equiv}^{-1}$. The value of Λ_{eq}^{∞} of NH_4OH is

A. 371.44

B. 271.44

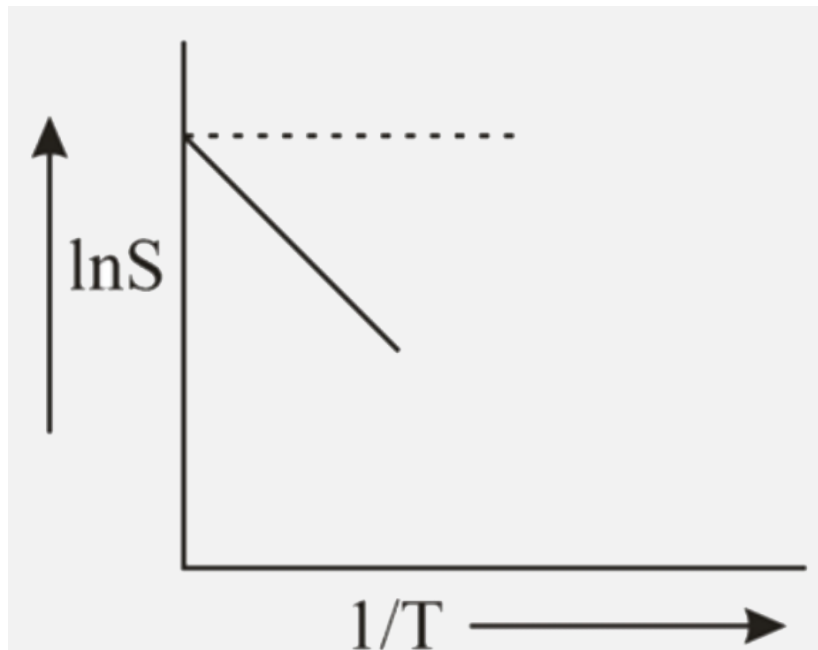
C. 71.44

D. It cannot be calculated from the data given

Answer: B

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30. The solubility (S) of solute in water varies with temperature as given by $S = Ae^{-\Delta H/RT}$, ΔH being the enthalpy of solution. For a given solute, variation of $\ln S$ with temperature is as shown in figure. The solute is expected to be



- A. CaO
- B. $MgSO_4$
- C. $CuSO_4$
- D. $CuSO_4, 5H_2O$

Answer: D



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31. What is incorrect regarding natural rubber?

1. It is cis polyisoprene
2. It is amorphous in nature
3. It has syndiotactic stereochemistry
4. Molecules of rubber have coiled conformation

A. 1,2

B. 2,4

C. 1,2,3

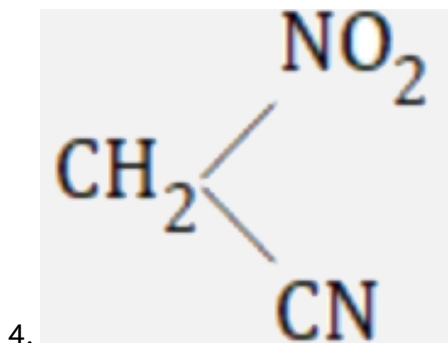
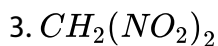
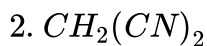
D. 1,2,4

Answer: D



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32. Arrange reactivity of given compounds in decreasing order with benzaldehyde in the presence of secondary amine.



A. 3,4,1,2

B. 3,4,2,1

C. 1,2,4,3

D. 4,3,2,1

Answer: C



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33. The movement of sol particles under an applied electric field is called

- A. electro deposition
- B. electrodialysis
- C. electro-osmosis
- D. electrophoresis

Answer: D



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34. The following data were obtained at a certain temperature for the decomposition of NH_3 in contact with catalyst.

$P(mn)$	25	50
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$t_{1/2}$	1.82	0.91
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The order of reaction is

- A. 2
- B. 3

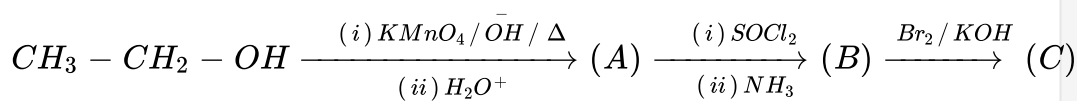
C. 1

D. 4

Answer: A

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35. In the given reaction sequences the final product 'C' is



A. Methylamine

B. Ethylamine

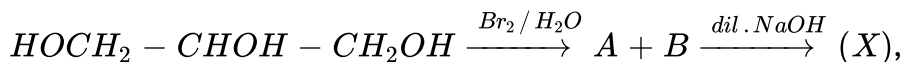
C. Propylamine

D. Acetamide

Answer: A

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36. In the given sequence



X is

- A. Glyceraldehyde
- B. Dihydroxyacetone
- C. Fructose
- D. Glucose

Answer: C



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37. The donor atoms in EDTA are-

- A. O-atoms only
- B. N-atoms only
- C. Two N-atoms and four O-atoms

D. Three N-atoms and three O-atoms

Answer: C

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38. The concentration of iron, lead, nitrate, and fluoride in a water sample from an underground lake was found to be 0.18 ppm, 35 ppb, 80 ppm and 1000 ppb, respectively. This water is unsuitable for drinking due to high concentration of

A. Lead

B. Nitrate

C. Iron

D. Fluoride

Answer: B

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39. Acetic acid and propionic acid have K_a values 1.75×10^{-5} and 1.3×10^{-5} respectively at a certain temperature. An equimolar solution of a mixture, of the two acids is partially neutralised by NaOH. How is the ratio of the contents of acetate and propionate ions related to the K_a values and the molarity?

A. $\left(\frac{\alpha}{1-\alpha}\right) = \frac{1.75}{1.3} \times \left(\frac{\beta}{1-\beta}\right)$, whereas α and β are ionized fractions of the acids

B. The ratio is unrelated to the K_a values

C. The ratio is unrelated to the molarity

D. The ratio is unrelated to the pH of the solution.

Answer: A



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40. One of the following metals forms a volatile compound and this property is taken advantage of for its extraction. This metal is

A. Iron

B. Nickel

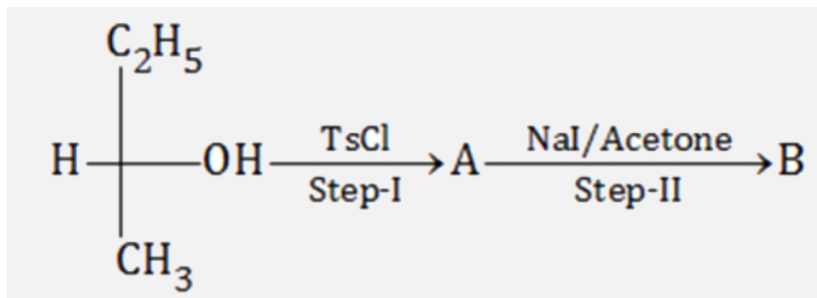
C. Cobalt

D. Tungsten

Answer: B

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41. Consider the statements for given reaction



1. In the first step, there is breaking of C - O bond
2. The second step is S_N2 reaction
3. There is retention of configuration in the first step
4. There is inversion of configuration in the second step

A. 1,2 and 3 are correct

B. 2,3 and 4 are correct

C. 1,3 and 4 are correct

D. 1,2,3 and 4 are correct

Answer: B

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42. In a constant volume calorimeter, 3.5g of a gas with molecular weight 28 was burnt in excess oxygen at 298.0K . The temperature of the calorimeter was found to increase from $298.0\text{K} \rightarrow 298.45\text{K}$ due to the combustion process. Given that the heat capacity of the calorimeter is 2.5kJK^{-1} , find the numerical value for the enthalpy of combustion of the gas in kJmol^{-1}

A. 90kJmol^{-1}

B. 9kJmol^{-1}

C. 18kJmol^{-1}

D. 6kJmol^{-1}

Answer: B

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43. Which of the following arrangements shows the schematic alignment of magnetic moments of ferromagnetic substance ?



Answer: B

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44. The specific rotation of a pure enantiomer is $+16^\circ$. The observed rotation, if it is isolated from a reaction with 25% racemisation and 75% inversion is

A. $+12^\circ$

B. -12°

C. 4°

D. -4°

Answer: B



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45. The ionisation energy of H atom is 13.6 eV. What will be the ionisation energy of He^\oplus and Li^{2+} ions ?

A. 54.4 ev. 122.4 ev

B. 5.44 ev. 12.24 ev

C. 6.82 eV, 13.6 eV

D. 13.4 eV, 122.4 eV

Answer: A



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