



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 114

Chemistry

1. Enthalpy of $CH_4 + \frac{1}{2}O_2 \rightarrow CH_3OH$ is

negative. If enthalpy of combustion of CH_4 and CH_3OH are x and y respectively, then which relation is correct?

A. $x > y$

B. $x < y$

C. $x = y$

D. $x > y$

Answer: A

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2. Which of the following has the highest boiling point?

A. Ne

B. He

C. CH_4

D. Xe

Answer: D

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3. Which will form lactone on treatment with NaOH?

A. δ -bromo acid

B. β -bromo acid

C. β - hydroxy acid

D. α - bromo acid

Answer: D



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4. 1.245 g of a sample of $CuSO_4 \cdot xH_2O$ was dissolved in water and H_2S passed till CuS was complete precipitated. The filtrate contained liberated H_2SO_4 , which required 20 mL of $\frac{N}{2}$ NaOH for complete neutralisation. Calculate x, the number of molecules of water associated with $CuSO_4$ ($Cu = 63.6$)

A. 3

B. 2

C. 4

D. 5

Answer: D

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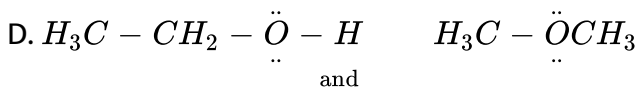
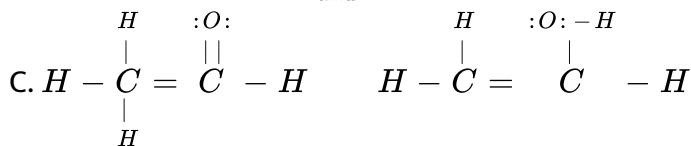
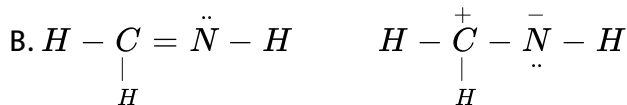
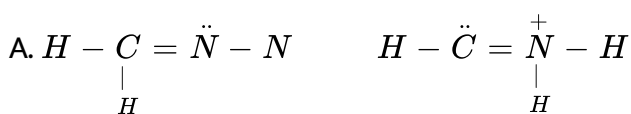
5. When NaOH pellets are left in the open air they acquire a fluid layer around each crystal as

- A. They start melting
- B. They absorbed moisture from air
- C. They absorb CO_2 from air
- D. They react with air to form a liquid compound

Answer: B

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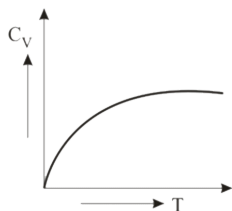
6. Which of the following pairs of Lewis structure represent resonance contributor to the species?



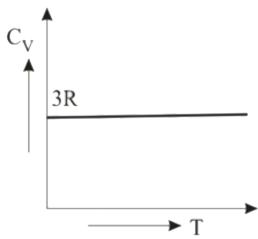
Answer: B

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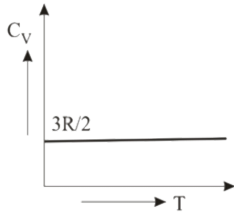
7. Graph for specific heat at constant volume for a monoatomic gas



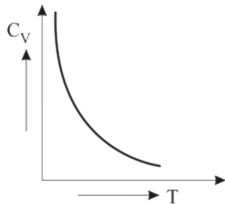
A.



B.



C.



D.

Answer: C



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8. (X), (Y), (Z) are elements in third short period. Oxide of (X) is ionic, (Y) is amphoteric and (Z) is a giant molecule. (X), (Y) and (Z) will have atomic number in the order :

A. (X) lt (Y) lt (Z)

B. (Z) lt (Y) lt (X)

C. (X) lt (Z) lt (Y)

D. (Y) lt (X) lt (Z)

Answer: A



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9. On reaction of ozone with hydrogen peroxide if we start with one volume of ozone. How many volumes of oxygen will form?

A. 1 volume

B. 0.5 volume

C. 1.5 volume

D. 2 volume

Answer: D

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10. The number of atoms in 100g of an fcc crystal with density $= 10.0 \text{ g cm}^{-3}$ and cell edge equal to 200 \AA is equal to

A. 5×10^{24}

B. 5×10^{25}

C. 6×10^{23}

D. 2×10^{25}

Answer: A

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11. Which of the following solvent will be able to dissolve dioxygen appreciably?

A. 1, 2, 3- trihydroxy benzene

B. Benzene

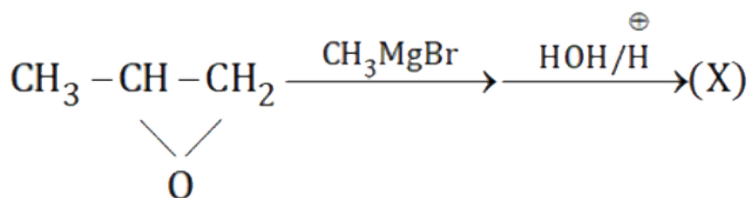
C. Toluene

D. Water

Answer: A

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12. In the given reaction



(X) will be

A. 1° -Alcohol

B. 2° - Alcohol

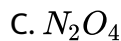
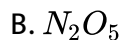
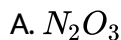
C. 3° -Alcohol

D. Open chain ether

Answer: B

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13. Which oxide of nitrogen condenses to a bluish liquid at $-30^{\circ}C$, but on warming it changes into reddish brown gas ?



Answer: A

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14. The melting point of most of the solid substances increases with an increase of pressure acting on them . However , ice melts at a

temperature lower than its usual melting point when the pressure increases . This is because :

- A. Ice is less dense water
- B. Pressure generates heat
- C. The bonds break under pressure
- D. Ice is not a true solid

Answer: A



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15. The pK_a of acetic acid and pK_b of ammonium hydroxide are 4.76 and 4.75 respectively. Calculate the pH of ammonium acetate solution.

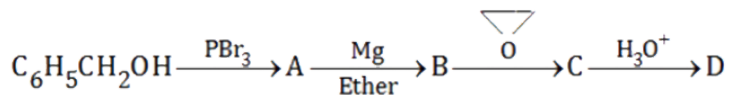
- A. 7.5
- B. 7.005
- C. 7.05

D. 7.55

Answer: B

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16. The final product 'D' of the reaction

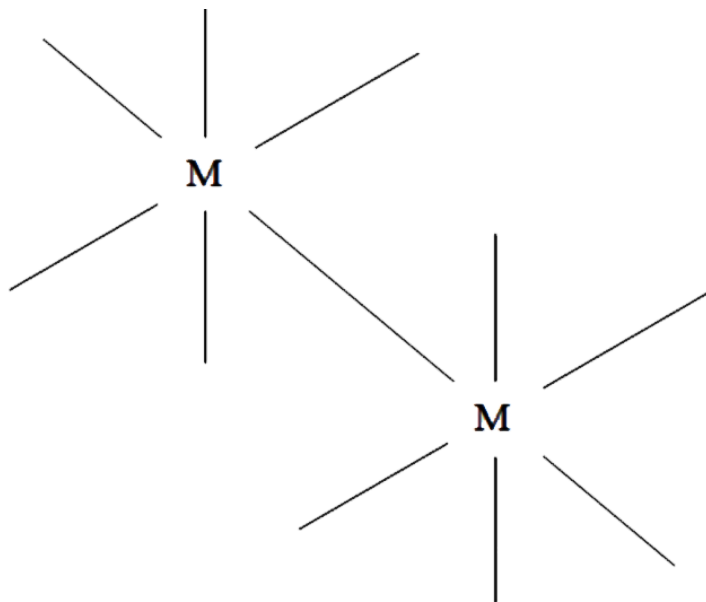


- A. $\text{C}_6\text{H}_5\text{CH}_2\text{OCH}_2\text{CH}_3$
- B. $\text{C}_6\text{H}_5\text{CH}(\text{OH})\text{CH}_2\text{CH}_2\text{OH}$
- C. $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{CH}_2\text{OH}$
- D. $\text{C}_6\text{H}_6\text{CH}_2\text{CH}_2\text{OCH}_3$

Answer: C

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17. Which of the following metal carbonyl has structure in the diagram?



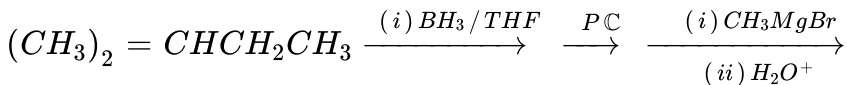
- A. $Cr(CO)_6$
- B. $Mn_2(CO)_{10}$
- C. $Fe_2(CO)_9$
- D. $Co_2(CO)_8$

Answer: B



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18. What is the final product of the reaction?



- A. 2,3-dimethyl pentan - 3 - ol
- B. 2,4 - dimethyl pentane - 3-ol
- C. 2,3 - dimethyl pentan - 2- ol
- D. 2,2-dimethyl pentan-3-ol

Answer: A



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19. An energy of $24.6eV$ is required to remove one of that electrons from a neutral helium atom. The energy (in eV)required to remove both the electrons from a neutral helium atom is

- A. 38.2 eV
- B. 49.2 eV

C. 51.8 eV

D. 79 eV

Answer: D

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20.

Given

$$E_{Ag^{\oplus} | Ag}^{\circ} = + 0.80V, E_{Co^{2+} | Co}^{\circ} = - 0.28V, E_{Cu^{2+} | Cu}^{\circ} = + 0.34V, E_{Zn^{2+} | Zn}^{\circ} = - 0.76V$$

Which metal will corrode fastest?

A. Ag

B. Cu

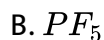
C. Co

D. Zn

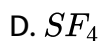
Answer: D

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21. In which of the following molecules all A - X bond lengths are identical? [A = central atom and X = surrounding atom]



C. Both A and B



Answer: A



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22. Which of the following orbitals of hydrogen atom should have the value of their radius in the ratio 1 : 4?

A. K and L

B. L and N

C. M and N

D. A and B are correct

Answer: D

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23. By starting with 0.5 moles of sodium peroxide how many moles of dioxygen gas can be obtained by dropping excess of acidified potassium permanganate solution on it ?

A. 0.125 mole

B. 1 mole

C. 0.25 mole

D. 0.5 mole

Answer: D

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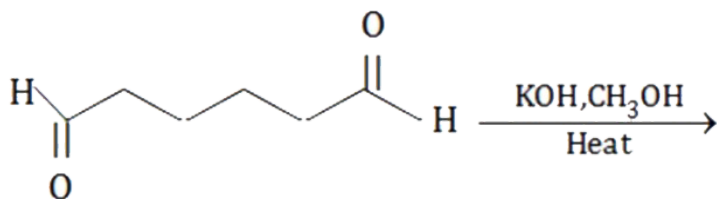
24. When mercuric iodide is added to the aqueous solution of potassium iodide, then:

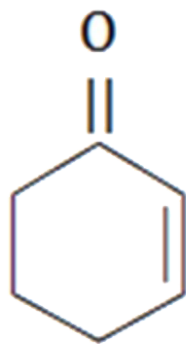
- A. Freezing point is raised
- B. Freezing point is lowered
- C. Freezing point does not change
- D. Boiling point does not change

Answer: A

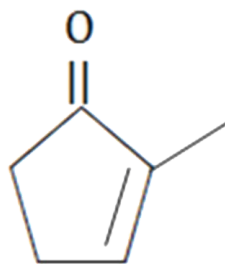
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25. What is the product of intramolecular aldol condensation reaction?

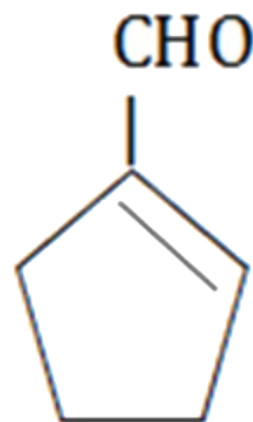




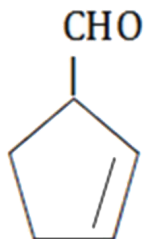
A.



B.



C.

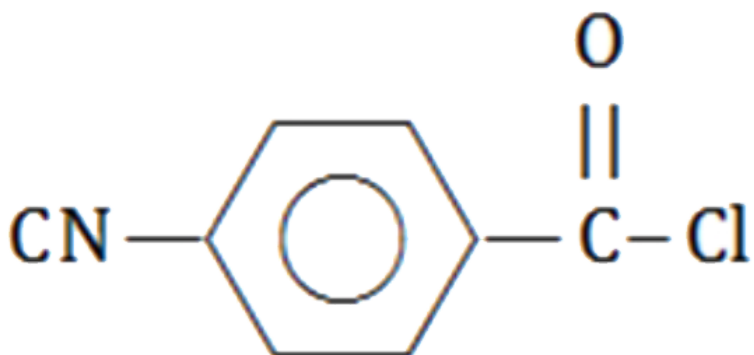
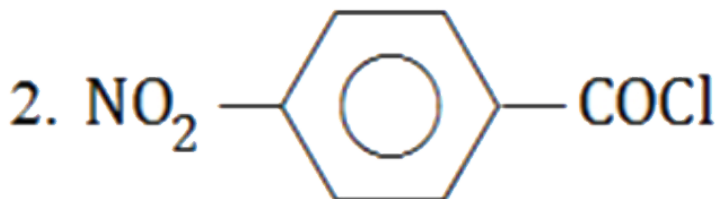
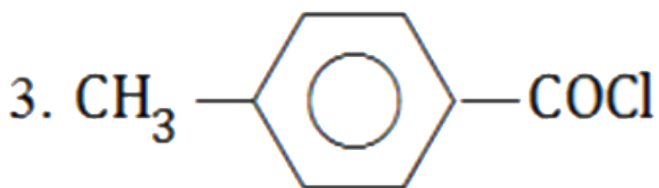


D. _____

Answer: C

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26. Arrange following compounds in decreasing order of reactivity for hydrolysis reaction



A. $3 > 1 > 2$

B. $2 > 3 > 1$

C. $2 > 1 > 3$

D. $1 > 3 > 2$

Answer: C

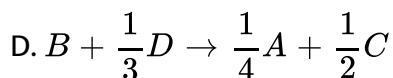
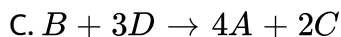
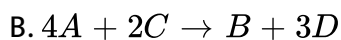
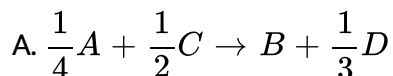


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27. The rate reaction is expressed as

$$\frac{1}{2} \frac{+d}{dt} [C] = \frac{1}{3} \frac{-d}{dt} [D] = \frac{1}{4} \frac{+d}{dt} [A] = - \frac{d}{dt} [B]$$

The reaction is

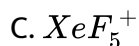
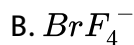


Answer: C



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28. Which of the following molecule/species is having minimum number of lone pair on its central atom?



Answer: C



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29. Calculate the solubility product of $Co_2[Fe(CN)_6]$ in water at $25^\circ C$.

Given, conductivity of saturated solutions of $Co_2[Fe(CN)_6]$ is $2.06 \times 10^{-6} \Omega^{-1} cm^{-1}$ and that of water used is $4.1 \times 10^{-7} \Omega^{-1} cm^{-1}$.

The ionic molar conductivities of Co^{2+} and $[Fe(CN)_6]^{4-}$ are $86.0 \Omega cm^2 mol^{-1}$ and $444.0 \Omega^{-1} cm^2 mol^{-1}$, respectively.

A. 7.87×10^{-17}

B. 7.87×10^{-6}

C.

D. 7.87×10^{-9}

Answer: A



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30. The acid form of an acid base indicator is yellow in acid and red in basic form. What is the change in pH in order to change the indicator from 80 % yellow to 80 % red.

A. 1.2

B. 2.1

C. 0.12

D. 12

Answer: A

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31. What is true regarding free radical polymerization of ethylene?

- A. Polymerization is invoked by either peroxide initiator or radiation
- B. Polymerization is exothermic in nature
- C. Molecular weight gain occur in propagation step of polymerization
- D. All of these

Answer: D

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32. Which acid can be oxidised by H_2O_2 ?

- A. Malonic acid

B. Acetic acid

C. Oxalic acid

D. Propanoic acid

Answer: D



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33. In the adsorption of oxalic acid on activated charcoal, the activated charcoal is called

A. Adsorbent

B. Adsorbate

C. Adsorber

D. Absorber

Answer: A



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34. Consider a reaction $X + Y \rightarrow \text{Products}$. If the initial concentration of X increased to four times of its original value, keeping the concentration of Y constant, the rate of reaction increases four-fold. When the concentration of both X and Y becomes four times their original values the rate of reaction becomes 16 times its original values.

The observed rate law is

A. $k[X]^2[Y]^2$

B. $k[X]^1[Y]^2$

C. $k[X]^1[Y]^1$

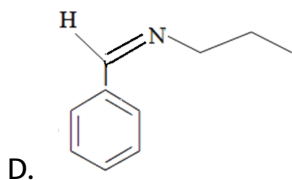
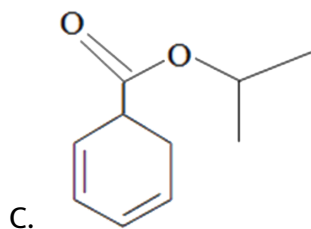
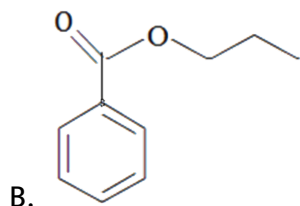
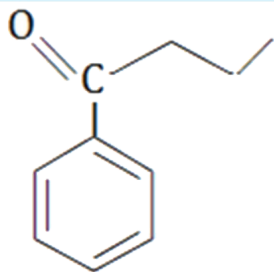
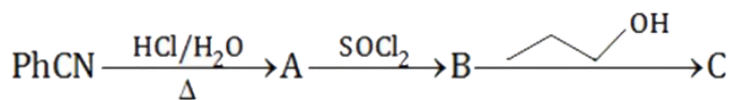
D. $k[X]^2[Y]^1$

Answer: C



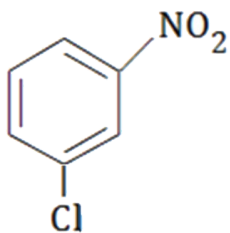
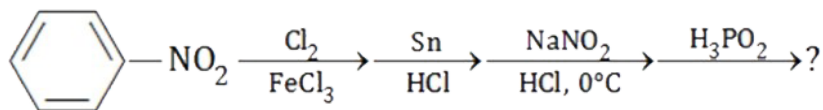
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35. What is the product C of the reaction?

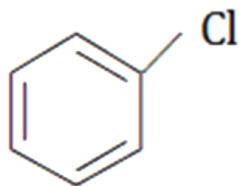


Answer: B

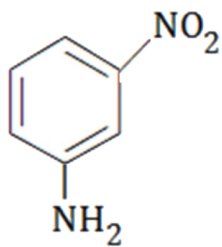
36. What is the product of the reaction sequence?



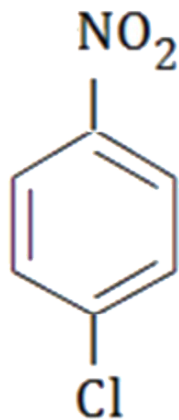
A.



B.



C.



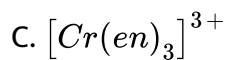
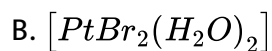
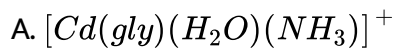
D.

Answer: B



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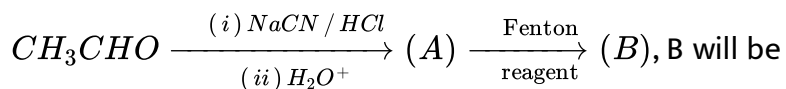
37. Which of the following co-ordination compound has three stereoisomers /



Answer: D

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38. In the given reaction sequence

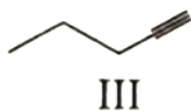


- A. Acetic acid
- B. Oxalic acid
- C. Pyruvic acid
- D. Citric acid

Answer: C

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39. Choose the increasing order of the activity of compounds shown.



A. III lt II lt I lt IV

B. IV lt II lt I lt III

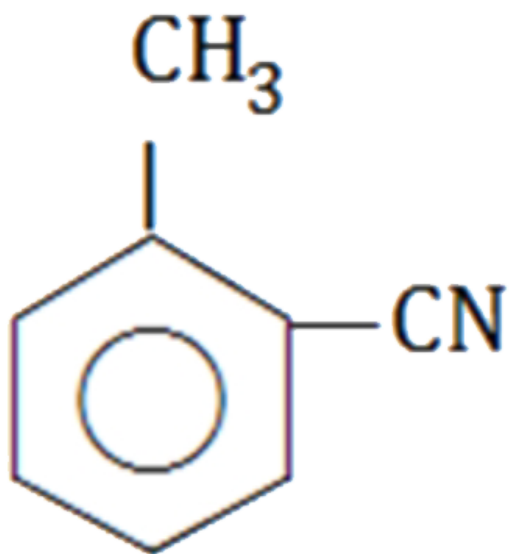
C. I lt III lt II lt IV

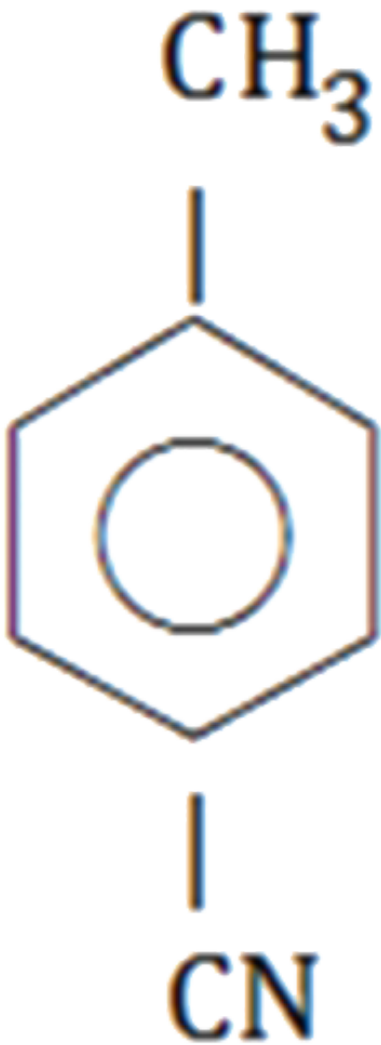
D. I lt II lt IV lt III

Answer: C

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40. Arrange dipole moments of these compounds in decreasing order





A. 3,1,2

B. 2,1,3

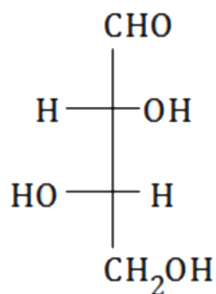
C. 3,2,1

D. 1,3,2

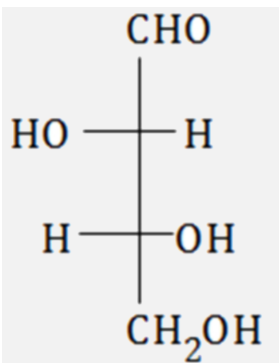
Answer: C

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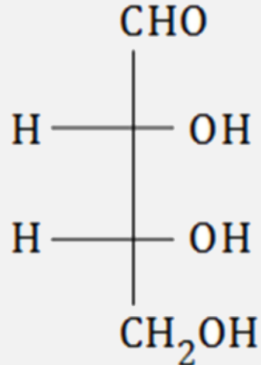
41. Which of the following structures is a D-aldotetrose that gives a meso diacid upon oxidation with dilute aq. HNO_3 ?



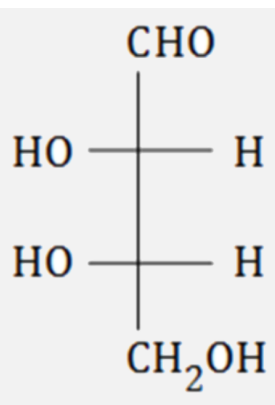
A.



B.



C.



D.

Answer: C

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42. The ratio of packing fraction in fcc, bcc, and cubic structure is, respectively,

A. 1 : 0.92 : 0.70

B. 0.70 : 0.92 : 1

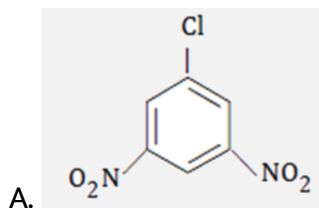
C. 1 : 0.70 : 0.92

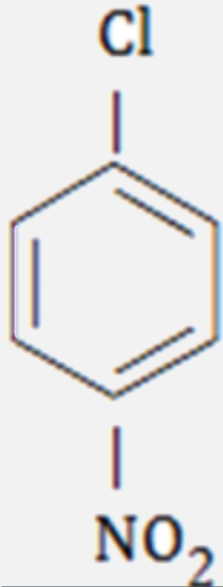
D. 0.92 : 0.70 : 1

Answer: A

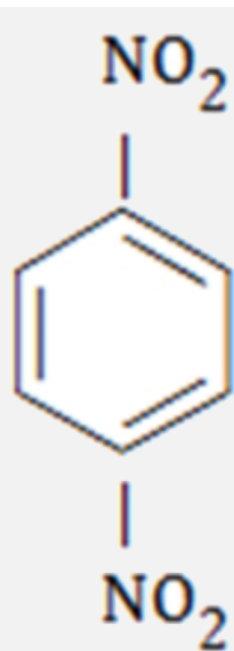
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43. Which of the aromatic compounds reacts fastest with methoxide ion?

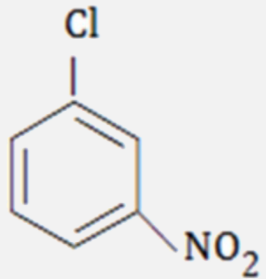




B.



C.

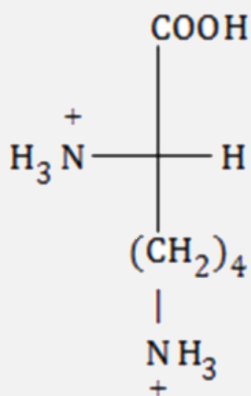


D.

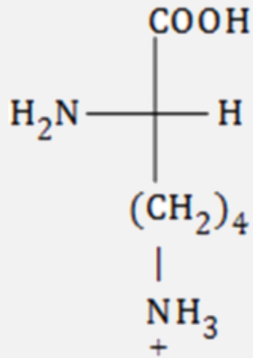
Answer: B

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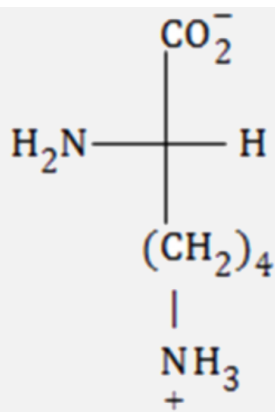
44. Which of the following is the major solute species in a solution of lysine at $pH = 10.5$?



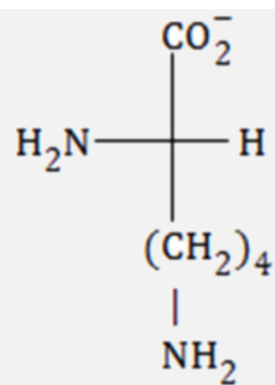
A.



B.



C.

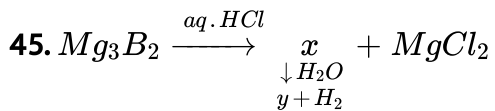


D.

Answer: D



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for (X) and (Y) the incorrect choice is?

A. (X) is BCl_3

B. (Y) is H_2BO_3

C. (X) with air and (Y) on strong heating (red heat) give same compound

D. In (Y) boron completes its octet by moving H^+ from water molecule

Answer: A



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