CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA JEE MOCK TEST 80

Chemistry

1. Equivalent weight of $KmNO_4$ when it is convert into $MnSO_4$ is Where M = molar mass of $KMnO_4$.

A. $M/5$

B. $M/6$

C. $M/3$

D. $M/2$

Answer: A

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2. In which of the following species maximum atom can lie in same plane ?

A. XeF_2O_2

B. PCl_5

C. AsH_4^+

D. XeF_4

Answer: D

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3. Conectrated aqueous sodium hydroxide can be a separated mixture of

A. Al^{3+} and Sn^{2+}

B. Al^{3+} and Fe^{3+}

C. Al^{3+} and Z^{2+}

D. Zn^{2+} and Pb^{2+}

Answer: B

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4. Consider the following substances

1. $CH_3C \equiv CCH_3$

2. $CH_3CH_2C \equiv CH$

3. $CH_3CH = CHCH_3$

4. $CH_3CH_2CH = CH_2$

Which of the following reagent can be used to distinguish the compound

(2) from the rest of the compounds?

A. Bromin/ CCl_4

B. Bromine/CH_3COOH

C. $Alk.\ KMnO_4$

D. Ammonical $AgNO_3$ or ammoniacal cuprous chloride

Answer: D

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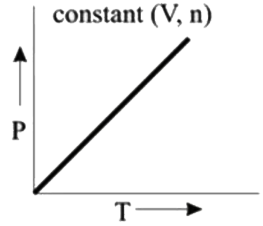
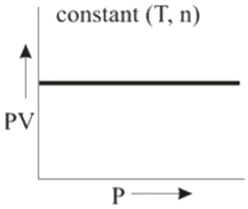
5. Which of the following graphs show most significant deviation from ideal gas behaviour ?

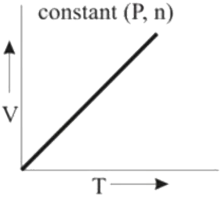
A.



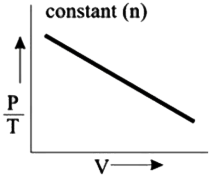
B.



C.



D.



Answer: D

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6. Which of the following will be oxidised by HIO_4?

(A) $R-\underset{\underset{O}{||}}{C}-\underset{\underset{O}{||}}{C}-R$

(B) $R-\underset{\underset{O}{||}}{C}-\underset{\underset{OH}{|}}{CH}-R$

(C) $R-\underset{\underset{OH}{|}}{CH}-\underset{\underset{OH}{|}}{CH_2}-CH-R$

(D) $R-\underset{\underset{OH}{|}}{CH}-\underset{\underset{OH}{|}}{CH}-R$

A. 1, 2 and 3

B. 1, 3 and 4

C. 1, 2 and 4

D. 2, 3 and 4

Answer: C

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7. The freezing point of a 0.08 molal solution of $NaHSO^4$ is $-0.372^\circ C$. Calculate the dissociation constant for the reaction.

K_f for water =$1.86Km^{-1}$

A. 0.04

B. 0.02

C. 0.01

D. 0.2

Answer: A

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8. Among the following the one that gives positive iodoform test upon reaction with l_2 and $NaOH$ is

A. $CH_3CH_2CH(OH)CH_2CH_3$

B. $C_6H_5CH_2CH_2OH$

C. $PhCHOHCH_3$

D. $CH_3CH(CH_2OH)CH_3$

Answer: C

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9. Potassium ferrocyanide is used in the detection of

A. Cu^{2+} ion

B. Fe^{3+} ion

C. Mn^{2+} ions

D. Both A and B

Answer: D

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10. $1g$ of $._{79}\ Au^{198}\left(t_{1/2} = 65hr\right)$ decays by β-emission to produce stable Hg.

a. Write nuclear reaction for process.

b. How much Hg will be present after 260 hr.

A. 0.93 g

B. 0.85 g

C. 1 g

D. 0.79 g

Answer: A

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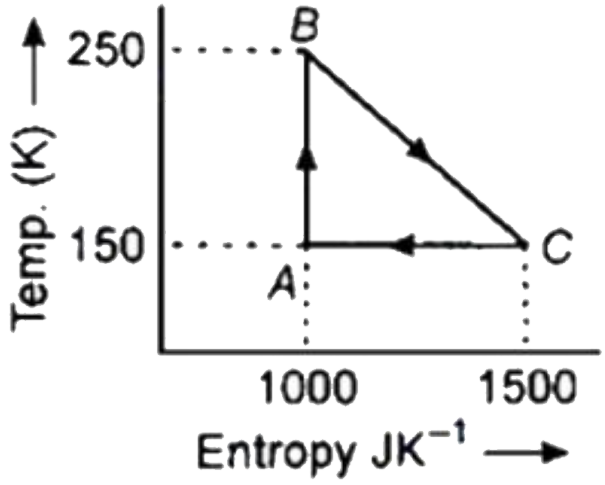
11. The efficiency of the reversible cycle shown in the figure will be



A. $33.33\ \%$

B. $56\ \%$

C. $66\ \%$

D. $25\ \%$

Answer: D

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12. Ester containing $\alpha -$ hydrogens undergo self condensation in presence of a strong base such as sodium ethoxide to form $\beta -$ ketoesters. This reaction is called

A. Aldol condensation

B. Claisen condensation

C. Diekmann condensation

D. Crossed - Claisen condensation

Answer: B

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13. Which of the following is most likely structrure of $CrCI_3.6H_2O$ if $1/3$ of total chlorine of the compound is precipitated by adding $AgNO_3$ to its aqueous solution?

A. $CrCl_3.6H_2O$

B. $\left[Cr(H_2O)_3Cl_3\right].3H_2O$

C. $\left[CrCl_2(H_2O)_4\right]Cl.2H_2O$

D. $\left[CrCl(H_2O)_5\right]Cl_2.\ H_2O$

Answer: C

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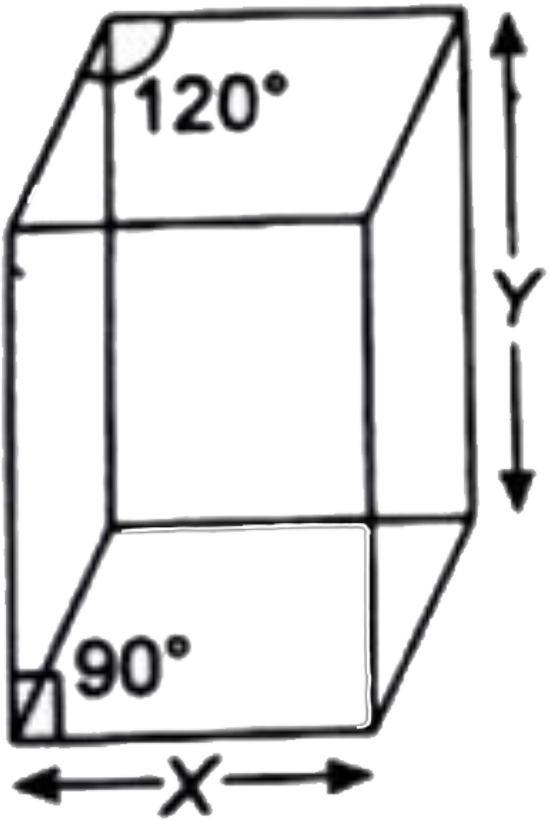

14.

$X = 5\text{Å}$

$Y = 8\text{Å}$

Molar mass of solid $= 259.8\ \text{g mol}^{-1}$

A solid crystallises in hexagonal lattice as shown in above figure. Density of the solid is 5g/ml. How many molecules are their in the given unit cell?

$\left(\text{Avagadro's number} \quad = 6.023 \times 10^{23}\right)$

A. 2

B. 3

C. 4

D. 6

Answer: A

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15. Calculate the cell potential of following cell

$Pt(s)|H_2(g)(0.1\text{ bar})|BOH(0.1M)||HA(0.1M)|H_2(g)(1\text{ bar})|Pt$

Given

$K(a)\left(HA10^{-7}, K_b(BOH) = 10^{-5}\right.$

A. 0.39 V

B. 0.36 V

C. 0.93 V

D. 0.63 V

Answer: A

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16. Identify the final product (z) in the following sequence of reactions

$$C_6H_5COOH \xrightarrow[(ii)\,PBr_3]{(i)\,LiAlH_4} X \xrightarrow{KCN} Y \xrightarrow{LiAlH_4} Z$$

A. $C_6H_5CH_2NH_2$

B. $C_6H_5CH_2CH_2NH_2$

C. $C_6H_5CH_2CH_2CH_2NH_2$

D. $C_6H_5\underset{\underset{CH_3}{|}}{CH}-NH_2$

Answer: B

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17. Some drugs interact with enzymes and make the biologically inactive.

Such drugs are called

A. enzyme promoters

B. enzyme inhibitors

C. allogens

D. all of these

Answer: B

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18. Derivative of nitrogen (III) act as

A. Oxidizing agent only

B. reducing agent only

C. both oxidizing and reducing agent

D. nitrating agent

Answer: C

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19. Which of the following statements is incorrect?

A. Cassiterite ore of tin contains the impurities of Wol - framite which are separated by electromagnetic separator.

B. Tin metal is obtained by the carbon reduction of black tin.

C. In the extraction of lead from galena the roasting and self - reduction are carried in the same furnace at different temperatures.

D. Reducing agent of haematite in blast - furnaceis coke in upper part and CO in lower part of furnace.

Answer: D

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20. Reduction of hexose A (molecular formula $C_6H_{12}O_6$) with sodium borohydride gives compound B and C. Compound B is optically inactive,

whereas compound C is optically active. Which of the following is compound A?

A. D - fructose

B. D - glucose

C. D - mannose

D. D - galactose

Answer: A

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21. A compound with molcular formula $C_4H_{10}O_3$. is converted by the action of acetyl chloride to a compound of molecular mass 190. The original compound $(C_4H_{10}O_3)$ has

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22. How many of these molecules get dimerise by 3c - 4e bonds

$BeCl_2, AlCl_3, BH_3, BeH_2, Icl_3, CH_3COOH$

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23. For the following reaction

$Ag^+_{(aq)} + Cl^-_{(aq)} \rightarrow AgCl_{(s)}$

Given :

$\Delta G^\circ_f, AgCl = -112.44\,\text{kJ/mol}, \Delta G^\circ_f Cl^- = -130\,\text{kJ/mol}, \Delta G^\circ_f Ag^+ =$

Report your answer by rounding it upto nearest whole number. The K_{sp} of $AgCl$ is $n \times 10^{-10}$. The value of 'n" is .

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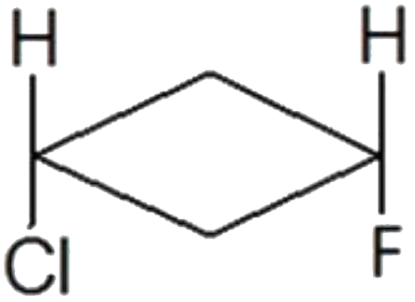
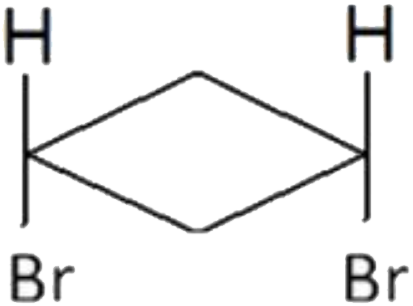
24. How many of the following are optically active ?

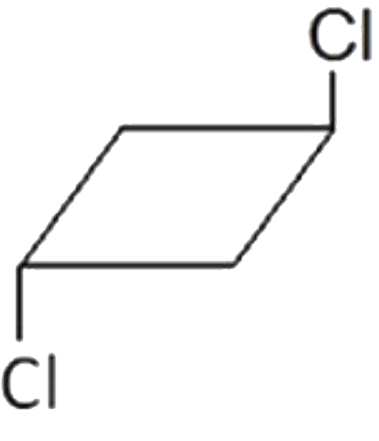
(A)



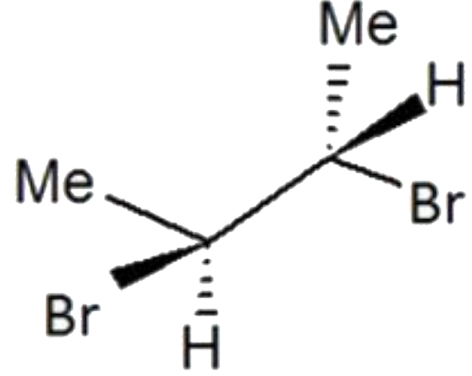
(B)



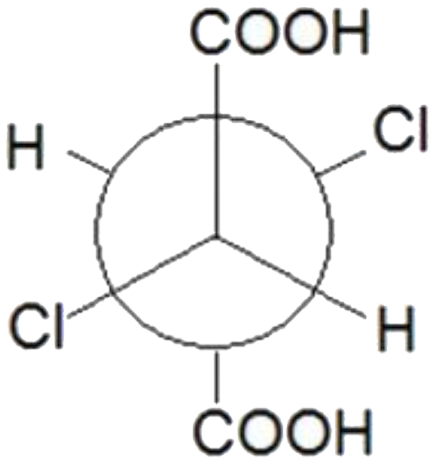
(C)

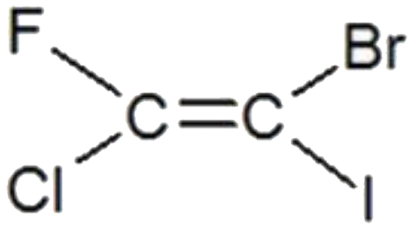


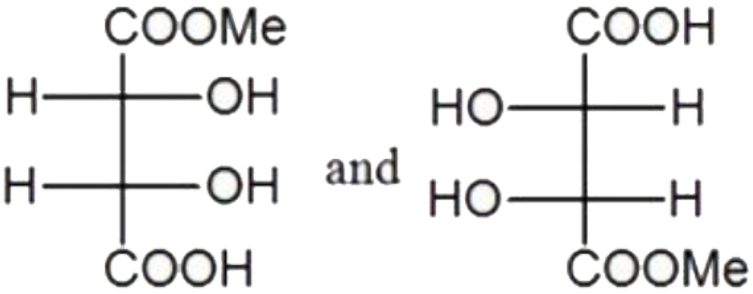
(D)



(E)







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25. The wave number of the first emission line in the Balmer series of H - Spectrum is $\frac{n}{36}R$. The value of 'n' is. (R = Rydberg constant):

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