



CHEMISTRY

BOOKS - A2Z CHEMISTRY (HINGLISH)

MOCK TEST

Mock Test 1

1. Wave number of spectral line for a given transition is $x\text{cm}^{-1}$ for He^+ , then its value for Be^{3+} (isoelectronic of He^+) for same transition is:

A. (a) $x \text{ cm}^{-1}$

B. (b) $4x \text{ cm}^{-1}$

C. (c) $\frac{x}{4} \text{ cm}^{-1}$

D. (d) $2x \text{ cm}^{-1}$

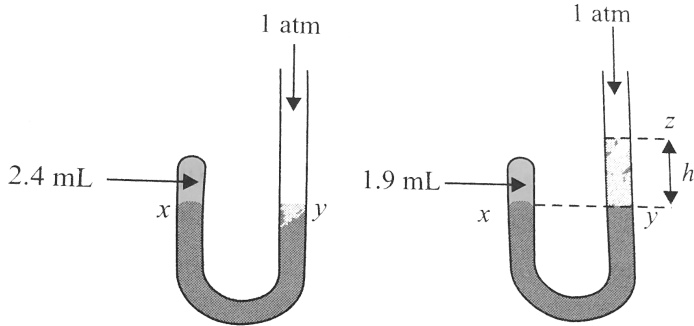
Answer: B



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2. Given J-tube has 2.4 mL of air at a pressure of 1 atm. On adding mercury, volume of air is reduced to 1.9 mL as shown. Difference in the level of mercury in

two columns is:



A. (a) 700 mm

B. (b) 200 mm

C. (c) 900 mm

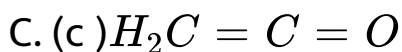
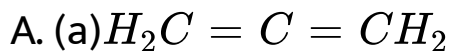
D. (d) 760 mm

Answer: B



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3. Which of the following is not a planar molecule?



Answer: A



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4. How many alkenes are possible with molecular formula C_4H_8 ?

A. (a)2

B. (b)3

C. (c)4

D. (d)6

Answer: C



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5. A solution is a mixture of 0.05 M NaCl and 0.05 M NaI. The concentration of iodide in the solution when AgCl just starts precipitating is equal to:

$$(K_{sp}AgCl = 1 \times 10^{-10}M^2, K_{sp}AgI = 4 \times 10^{-16}M^2)$$

A. (a) $4 \times 10^{-6} \text{ M}$

B. (b) $2 \times 10^{-8} \text{ M}$

C. (c) $2 \times 10^{-7} \text{ M}$

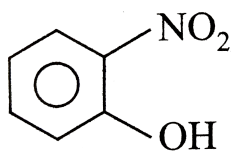
D. (d) $8 \times 10^{-15} \text{ M}$

Answer: C

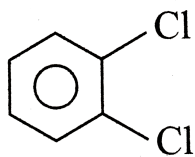


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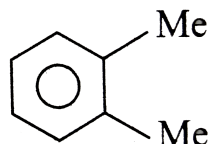
6. Which of the following is the correct order of dipole moment?



(I)



(II)



(III)

A. (a) $I = II = III$

B. (b) $I < II < III$

C. (c) $I > II > III$

D. (d) $II < III < I$

Answer: D



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7. The reactivity of alkyl halides for Wurtz reaction is:

A. (a) $1^\circ > 2^\circ > 3^\circ$

B. (b) $3^\circ > 2^\circ > 1^\circ$

C. (c) $2^\circ > 3^\circ > 1^\circ$

D. (d) $1^\circ > 3^\circ > 2^\circ$

Answer: A



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8. 1 mol of H_3PO_2 , H_3PO and H_3PO_4 will neutralise x mol $NaOH$, y mol of $Ca(OH)_2$ and z mol of $Al(OH)_3$ respectively (assuming all as strong electrolytes). x, y, z are in the ratio of:

A. (a) 3 : 1.5 : 1

B. (b) 1 : 2 : 3

C. (c) 3 : 2 : 1

D. (d) 1 : 1 : 1

Answer: D



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9. For the reaction at 298K



$$\Delta H = 400 \text{ kJ mol}^{-1} \text{ and } \Delta S = 0.2 \text{ kJ K}^{-1} \text{ mol}^{-1}$$

At what temperature will the reaction becomes

spontaneous considering ΔH and ΔS to be constant over the temperature range.

A. (a) $2000K$

B. (b) $1800K$

C. (c) $2100K$

D. (d) $1900K$

Answer: C



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10. The equilibrium constant for the reaction

$A_{(g)} + 2B_{(g)} \rightarrow C_{(g)}$ is $0.25 \text{ dm}^6 \text{ mole}^{-2}$. In a

volume of 5dm^3 , what amount of A must be mixed with 4 moles of B to yield 1 mole of C at equilibrium.

A. (a) 12.5 moles

B. (b) 26 moles

C. (c) 25 moles

D. (d) 13 moles

Answer: B



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11. 12.825gm of a sample of $\text{Ba}(\text{OH})_2$ is dissolved in 10ml of 0.5NHCl solution. The excess of HCl was

titrated with $0.2N NaOH$. The volume of $NaOH$ used was $10cc$. The percentage of $Ba(OH)_2$ in the sample is

A. (a) 2.58

B. (b) 6.4

C. (c) 8

D. (d) 2

Answer: D



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12. In a saturated solution of calcium phosphate, the concentration of PO_4^{-3} ions is 3.3×10^{-7} . The K_{sp} of $Ca_3(PO_4)_2$ will be

A. (a) 1.32×10^{-31}

B. (b) 1.32×10^{-32}

C. (c) 1.32×10^{-33}

D. (d) 1.32×10^{-33}

Answer: B



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13. 'A' is an oxide of xenon. 'A' is hygroscopic and explosive. The number of non-bonded electron pairs in the molecule of A and hybridisation of central atom is

A. (a) 1, sp^3

B. (b) 3, sp^3

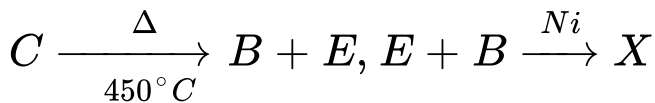
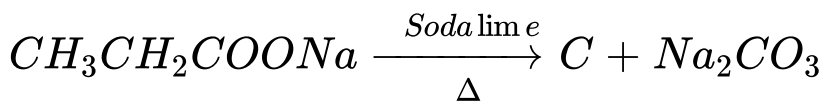
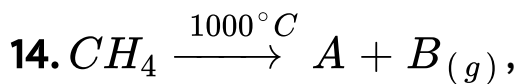
C. (c) 7, sp^3

D. (d) 6, sp^3

Answer: C



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If E is a hydrocarbon, then X is identical with

A. (a) A

B. (b) B

C. (c) C

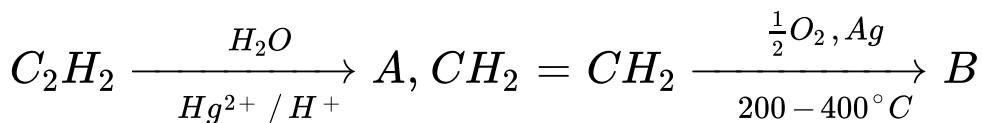
D. (d) D

Answer: C



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15.



- A. (a) A and B are same compounds
- B. (b) A and B are isomers
- C. (c) A and B are different compounds with different formula
- D. (d) A and B are unsaturated

Answer: B



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16. The solubility product of $Ni(OH)_2$ is 2.0×10^{-15} . The molar solubility of $Ni(OH)_2$ in $0.1MNaOH$ solution is

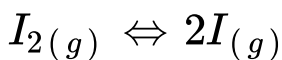
- A. (a) 1.0×10^{-5}
- B. (b) $2.0 \times 10^{-13} M$
- C. (c) $4.44 \times 10^{-8} M$
- D. (d) $2.0 \times 10^{-12} M$

Answer: B



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17. At a certain temperature and a total pressure of 10^5 Pa , iodine vapour contains 40% by volume of I atoms, Calculate K_p for the equilibrium.



A. (a) 2.67×10^4

B. (b) 2.67×10^6

C. (c) 4×10^3

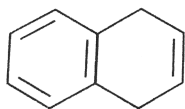
D. (d) 6×10^3

Answer: A

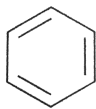


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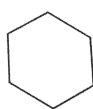
18. Which of the following compounds will show aromatic character?



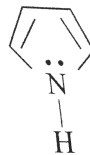
I



II



III



IV

A. (a) *II* and *IV*

B. (b) *I*, *II* and *IV*

C. (c) *II* and *III*

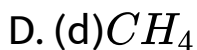
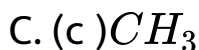
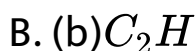
D. (d) *I* and *II*

Answer: A



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19. In a hydrocarbon the mass ratio of hydrogen to carbon is 1:3. The empirical formula of the hydrocarbon is



Answer: D



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20. Compressibility factor (Z) for a van der Waals real gas at critical point is

A. (a) $\frac{3}{8}$

B. (b) $\frac{8}{3}$

C. (c) $\frac{8}{27}$

D. (d) $\frac{27}{8}$

Answer: A



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21. How many open chain isomers are possible are with the formula $C_3H_4Cl_2$?

A. (a)8

B. (b)6

C. (c)7

D. (d)5

Answer: C



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22. The designation of a sub-shell with $n = 4$ and $l = 3$ is

A. (a) $4s$

B. (b) $4p$

C. (c) $4d$

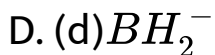
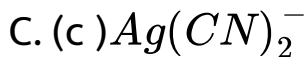
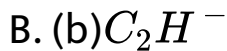
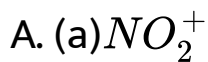
D. (d) $4f$

Answer: D



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23. Which of the following is not a linear species?



Answer: D

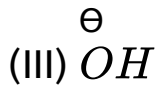


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24. The decreasing basic character of the following is

:





A. (a) $I > II > III > IV$

B. (b) $III > IV > II > I$

C. (c) $IV > III > II > I$

D. (d) $I > II > IV > III$

Answer: B



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25. K_{sp} of $Mg(OH)_2$ is 4.0×10^{-6} . At what minimum pH , Mg^{2+} ions starts precipitating $0.01MgCl$

A. (a) $2 + \log 2$

B. (b) $2 - \log 2$

C. (c) $12 + \log 2$

D. (d) $12 - \log 2$

Answer: C



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26. The equilibrium constant for a reaction

$A + 2B \rightleftharpoons 2C$ is 40. The equilibrium constant for reaction $C \rightleftharpoons B + 1/2A$ is

A. (a) $1/40$

B. (b) $(1/40)^{1/2}$

C. (c) $(1/40)^2$

D. (d) 40

Answer: B



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27. $1gH_2$ gas *STP* is expanded so that the volume is doubled. Hence, work done is

A. (a) 22.4 L-atm

B. (b) 5.6 L-atm

C. (c) 11.2 L-atm

D. (d) 44.8 L-atm

Answer: C



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28. At the top of the mountain, the thermometer reads $0^{\circ}C$ and the barometer reads $710mmHg$. At the bottom of the mountain the temperature is $30^{\circ}C$ and the pressure is $760mmHg$. The ratio of the density of air at the top with that at the bottom is

A. (a) 1 : 1

B. (b) 1.04 : 1

C. (c) 1 : 1.04

D. (d) 1 : 1.5

Answer: B

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29. The limiting line Balmer series will have a frequency of

A. (a) $32.29 \times 10^{15} \text{ s}^{-1}$

B. (b) $3.65 \times 10^{14} \text{ s}^{-1}$

C. (c) $-8.22 \times 10^{14} \text{ s}^{-1}$

D. (d) $8.22 \times 10^{14} \text{ s}^{-1}$

Answer: C

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30. If an our sample containing Mn is treated with $50mL$ of $0.2750MNa_2C_2O_4$ and the unreacted $Na_2C_2O_4$ required $18.28mL$ of $0.1232MKMnO_4$ in acidic medium, the number of moles of Mn in the ore is

A. (a) 1.38×10^{-2}

B. (b) 1.49×10^{-3}

C. (c) 1.15×10^{-2}

D. (d) 8.12×10^{-3}

Answer: D



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31. The oxidation number of oxygen in OF_2 is

A. (a) + 2

B. (b) - 2

C. (c) + 1

D. (d) - 1

Answer: C



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32. The M_w of a oxide of an element is 44. The E_w of the element is 14. The atomic weight of the element is

A. (a)14

B. (b)28

C. (c)42

D. (d)56

Answer: A



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33. At low pressure the van der Waals' equation is written as .

A. (a) $\frac{PV}{RT} = \left[1 - \frac{a}{RTV} \right]$

B. (b) $\frac{PV}{RT} = \left[1 - \frac{RTV}{a} \right]$

C. (c) $\frac{PV}{RT} = \left[1 + \frac{a}{RTV} \right]$

D. (d) $\frac{PV}{RT} = \left[1 + \frac{RTV}{a} \right]$

Answer: A



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34. Hydrogen gas will not reduce:

- A. (a) Heated cupric oxide
- B. (b) Heat ferric oxide
- C. (c) Heated stannic oxide
- D. (d) Heated aluminium oxide

Answer: D

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35. The equilibrium constant (K_p) at $27^\circ C$ for a homegenous gasesous reaction is 10^{-8} . The standard free energy change ΔG° for the reaction is: (Use $R = 2\text{calK}^{-1}\text{mol}^{-1}$)

A. (a) 11.05 kcal

B. (b) $- 1.8 \text{ kcal}$

C. (c) $- 4.1454 \text{ kcal}$

D. (d) $+ 4.1454 \text{ kcal}$

Answer: A



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36. In a flask, colourless N_2O_4 is in equilibrium with brown-coloured NO_2 . At equilibrium, when the flask is heated to $100^\circ C$ the brown colour deepens and

on cooling, the brown colour became less coloured.

The change in enthalpy ΔH for the system is

A. (a) Negative

B. (b) Positive

C. (c) Zero

D. (d) Undefined

Answer: B



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37. The atomic number of vanadium (V), chromium (Cr), manganese (Mn) and iron (Fe) are

respectively 23, 24, 25, 26. Which out of these may be expected to have the jump in second ionisation enthalpy?

A. (a) Mn

B. (b) Fe

C. (c) V

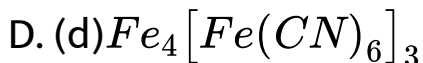
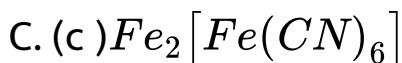
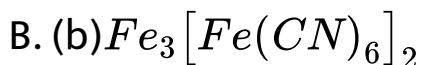
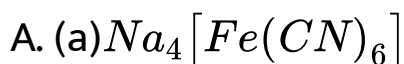
D. (d) Cr

Answer: D



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38. The Lassaigne's solution when heated with ferrous sulphate and acidified with sulphuric acid gave intense blue colour indicating the presence of nitrogen. The blue colour is due to formation of:

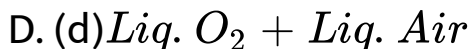
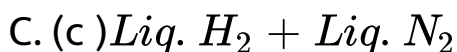
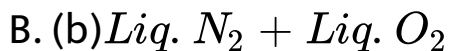
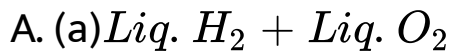


Answer: D



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39. Which one is used as propellants for rockets?



Answer: A



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40. A metal M readily forms its sulphate MSO_4 which is water soluble. It forms oxide MO which

becomes inert on heating. It forms insoluble hydroxide which is soluble in $NaOH$. The metal M is:

A. (a)Mg

B. (b)Ba

C. (c)Ca

D. (d)Be

Answer: D



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41. Assertion: Volume of a gas is inversely proportional to the number of moles of a gas.

Reason: The ratio by volume of gaseous reactants and products is in agreement with their molar ratio.

A. (a) If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. (b) If both assertion and reason are true and the reason is not the correct explanation of the assertion.

C. (c) If assertion is true but reason is false.

D. (d) If assertion is false but reason is true.

Answer: D



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42. Assertion : The dipole moment helps to predict whether a molecule is polar or non-polar.

Reason : The dipole moment helps to predict geometry of molecule.

A. (a) If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. (b) If both assertion and reason are true and the reason is not the correct explanation of the assertion.

C. (c) If assertion is true but reason is false.

D. (d) If assertion is false but reason is true.

Answer: A



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43. Assertion: A reaction $2SO_2 + O_2 \rightleftharpoons 2SO_3$, has K_p at 298 K and 500 K as 4.0×10^{24} and 8.5×10^{10} respectively.

Reason: The E_a for the forward reaction is lesser than E_b for the backward reaction.

A. (a) If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. (b) If both assertion and reason are true and the reason is not the correct explanation of the assertion.

C. (c) If assertion is true but reason is false.

D. (d) If assertion is false but reason is true.

Answer: A



44. Assertion : H_2 exists in two isomeric forms known as ortho and para forms

Reason : The ortho and para H_2 differ in the spin of their electron.

A. (a) If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. (b) If both assertion and reason are true and the reason is not the correct explanation of

the assertion.

C. (c) If assertion is true but reason is false.

D. (d) If assertion is false but reason is true.

Answer: C



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45. Assertion: Greenhouse effect was observed in houses used to grow plants and these are made of green glass.

Reason: Greenhouse name has been given because glass are of green glass.

A. (a) If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. (b) If both assertion and reason are true and the reason is not the correct explanation of the assertion.

C. (c) If assertion is true but reason is false.

D. (d) If assertion is false but reason is true.

Answer: A



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1. Ethylene combines with sulphur monochloride to form.

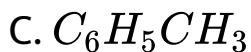
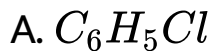
- A. Phosgene
- B. Mustard gas
- C. Methyl isocyanate
- D. Lewisite

Answer: B



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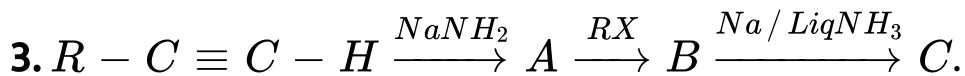
2. Benzene reacts with acetyl chloride in the presence of anhydrous $AlCl_3$ to give



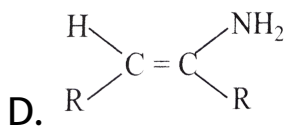
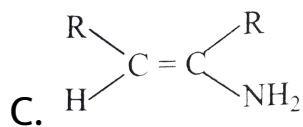
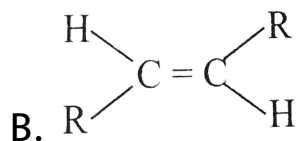
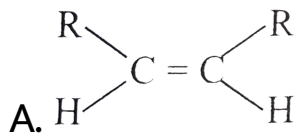
Answer: D



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The "product" 'C' is.



Answer: B



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4. 20ml of an H_2O_2 solution on reaction with excess of acidified $KMnO_4$ released 224 cc of O_2 . What is the volume strength of that H_2O_2 ?

A. 5.6 vol

B. 11.2 vol

C. 22.4 vol

D. 2.8 vol

Answer: A



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5. Hydrogen diffuses six times faster than gas A . The molar mass of gas A is

A. 72

B. 6

C. 24

D. 36

Answer: A



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6. Which of the following forms a homologous series ?

A. Ethane, ethylene, acetylene

B. Ethane, propane, butanone

C. Methane, ethanol, propanoic acid

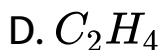
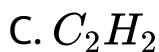
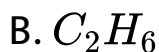
D. Butane, 2-methylbutane, 2,3-dimethyl butane

Answer: D



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7. Which of the following alkanes cannot be produced by Kolbe's electrolysis of sodium or potassium salts of carboxylic acids ?



Answer: A



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8. Which is not a tetrahedral species ?



Answer: C



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9. A mixture of CO , CO_2 and He on passing over red hot coke shows 40% increment in volume.

What is the mole fraction of CO_2 in the given mixture ?

A. 0.6

B. 0.4

C. 0.2

D. 0.8

Answer: B



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10. A gas with negligible intermolecular interactions shows compressibility factor 2 at a pressure 'P'.

What is its van der Waals constant 'b' ?

A. PRT

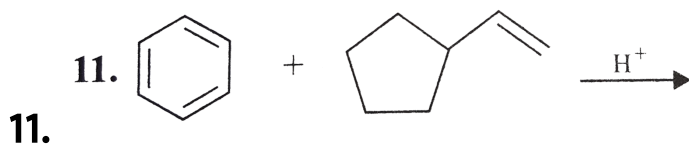
B. $\frac{P}{RT}$

C. $\frac{RT}{P}$

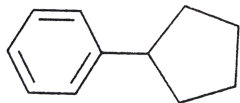
D. $\frac{T}{PR}$

Answer: C

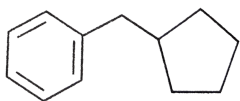
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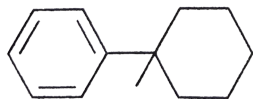
A.



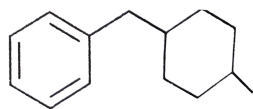
B.



C.



D.



Answer: C



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12. The conductivity of a saturated solution of $BaSO_4$ is $3.06 \times 10^{-6} \text{ ohm}^{-1} \text{ cm}^{-1}$ and its

equivalent conductance is $1.53 \text{ohm}^{-1} \text{cm}^2 \equiv^{-1}$.

The K_{sp} for $BaSO_4$ will be .

A. 4×10^{-6}

B. 2.5×10^{-9}

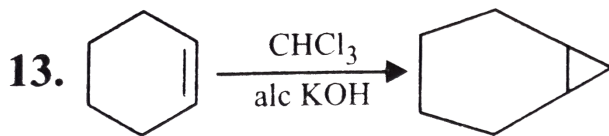
C. 2.5×10^{-13}

D. 4×10^{-12}

Answer: A



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13.

The reaction proceeds through _____.

- A. Electrophilic addition
- B. Nucleophilic addition
- C. Free radical addition
- D. Electrophilic substitution

Answer: A



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14. IE for He^+ is $1.96 \times 10^{-19} J \text{atom}^{-1}$. Calculate the energy of first stationary state of Be^{+3} .

A. $6.84 \times 10^{-19} J \text{atom}^{-1}$

B. $6.84 \times 10^{-23} J \text{atom}^{-1}$

C. $7.84 \times 10^{19} J \text{atom}^{-1}$

D. $7.84 \times 10^{23} J \text{atom}^{-1}$

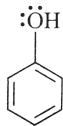
Answer: A



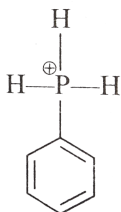
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15. Which of the following compounds will exhibit d-orbital resonance ?

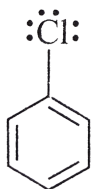
A.



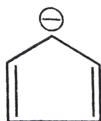
B.



C.



D.



Answer: B



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16. The heat of atomisation of $PH_{3(g)}$ is 228kcalmol^{-1} and that of P_2H_4 is 355kcalmol^{-1} .

Calculate the average bond energy of $P - P$ bond.

A. 63 kcal/mol

B. 58 kcal/mol

C. 5 kcal/mol

D. 45 kcal/mol

Answer: C



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17. Which of the following pairs of compounds may be regarded both as position isomers and functional isomers?

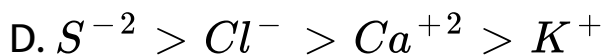
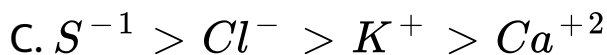
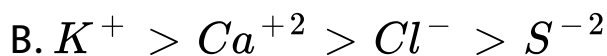
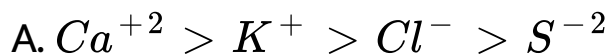
- A. Benzyl alcohol and methoxy benzene
- B. o-cresol and p-cresol
- C. Benzyl alcohol and o-cresol
- D. Benzyl alcohol and benzyl methyl ether

Answer: C



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18. The correct decreasing order of ionic size among the following species is K^+ , Cl^- , S^{-2} and Ca^{+2} .



Answer: C



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19. One mole of symmetrical alkene on ozonolysis gives two moles of an aldehyde having a molecular mass 58. The alkene

A. 1-Butene

B. 3-hexene

C. 2-hexene

D. 3-pentene

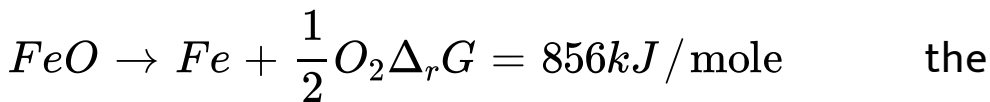
Answer: B



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20. The Gibbs energy for the decomposition of FeO

at $600^\circ C$ is as follows



potential difference needed for electrolytic reduction of FeO at $600^\circ C$ is at least.

A. $-3.6V$

B. $-4.73V$

C. $-5.2V$

D. $-4.42V$

Answer: D



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21. How many gem dihalides with different formulas are possible for $C_3H_6Cl_2$?

A. 1

B. 2

C. 3

D. 4

Answer: B



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22. A solution of $0.1MNaZ$ has $PH = 8.90$. The K_a of HZ is.

A. 6.3×10^{-11}

B. 6.3×10^{-10}

C. 1.6×10^{-5}

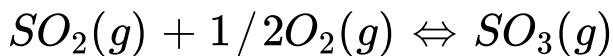
D. 1.6×10^{-6}

Answer: C



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23. Inert gas has been added to the following equilibrium system at constant volume



To which direction will the equilibrium shift?

- A. Forward
- B. Backward
- C. No effect
- D. Unpredictable

Answer: C



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24. 1mol of NH_3 gas at 27°C is expanded under adiabatic condition to make volume 8 times ($\gamma = 1.33$). Final temperature and work done, respectively, are

A. 150K , 900cal

B. 150K , 400cal

C. 250K , 1000cal

D. 200K , 800cal

Answer: A



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25. What weight of hydrogen at *STP* could be contained in a vessel that holds 4.8g oxygen at *STP* ?

A. 4.8 g

B. 3.0 g

C. 0.6 g

D. 0.3 g

Answer: D



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26. A cricket ball of 0.5kg moving with a velocity of 100ms^{-1} . The wavelength associated with its motion is

A. $1/100\text{cm}$

B. $66 \times 10^{-34}\text{m}$

C. $1.32 \times 10^{-35}\text{m}$

D. $6.6 \times 10^{-28}\text{m}$

Answer: C



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27. K_2CrO_4 oxidises KI in the presence of HCl to I_2 . The equivalent weight of the K_2CrO_4 is.

A. $\frac{M_w}{2}$

B. $M_w \times \frac{2}{3}$

C. $\frac{M_w}{3}$

D. $\frac{M_w}{6}$

Answer: C



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28. Which of the following is the strongest reducing agent in aqueous medium?

A. Mg

B. Na

C. Li

D. Ca

Answer: C



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29. Potassium selenate is isomorphous with potassium sulphate and contains 50.0 % of *Se*. The atomic weight of *Se* is

a. 142, b. 71, c. 47.33, d. 284

A. 142

B. 71

C. 47.33

D. 284

Answer: A



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30. 8g of sulphur are burnt to form SO_2 , which is oxidised by Cl_2 water. The solution is treated with $BaCl_2$ solution. The amount of $BaSO_4$ precipitated is:

- A. 1.0 mole
- B. 0.5 mole
- C. 0.75 mole
- D. 0.25 mole

Answer: D



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31. The maximum number of electrons in an orbital having same spin quantum number will be:

A. $l + 2$

B. $2l + 1$

C. $l(l + 1)$

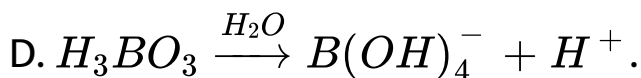
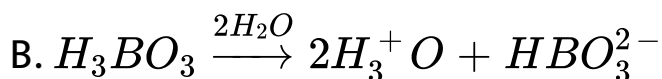
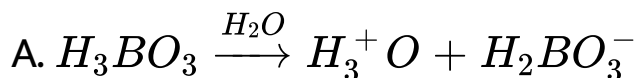
D. $\sqrt{l(l + 1)}$

Answer: B



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32. Which of the following correctly explains the nature of boric acid in aqueous medium :



Answer: D



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33. Molecular shape of SF_4 , CF_4 and XeF_4 are :

A. The same with 2, 0 and 1 lone pair of electron respectively.

B. The same with 1, 1 and 1 lone pair of electron respectively.

C. Different with 0, 1 and 2 lone pair of electrons respectively.

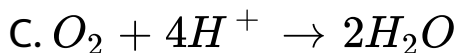
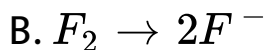
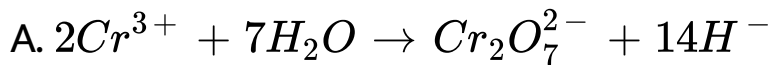
D. Different with 1, 0 and 2 lone pair of electrons respectively.

Answer: D



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34. Which reaction is possible at anode?



D. None of these

Answer: A



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35. Uncertainty in position of mass 25g in space is

$10^{-5}m$. The uncertainty in it's velocity (in ms^{-1} is :

A. 2.1×10^{-34}

B. 0.5×10^{-34}

C. 2.1×10^{-28}

D. 0.5×10^{-23}

Answer: C



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36. Out of the five isomeric hexanes, the isomer that can give two monochlorinated compounds is:

A. n-hexane

B. 2,3-Dimethyl butane

C. 2,2-Dimethyl butane

D. 2-methyl pentane

Answer: B



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37. Density of $2.05M$ solution of acetic acid in water is $1.02g/mL$. The molality of same solution is:

A. $0.44molkg^{-1}$

B. $1.14molkg^{-1}$

C. 3.28 mol kg^{-1}

D. 2.28 mol kg^{-1}

Answer: D



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38. A heat engine absorbs heat Q_1 at temperature T_1 and Q_2 at temperature T_2 . Work done by the engine is $(Q_1 + Q_2)$. This data:

A. Violates first law of thermodynamics

B. Violates first law of thermodynamics if

$$Q_1 = -ve$$

C. Violates first law of thermodynamics if

$$Q_2 = -ve$$

D. Does not violate first law of thermodynamics.

Answer: D



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39. Which of the alkali metal chlorides is expected to have the highest melting point ?

A. LiCl

B. NaCl

C. KCl

D. RbCl

Answer: A



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40. Which will produce hard water ?

A. Saturation of water with $CaSO_4$

B. Addition of Na_2SO_4 to water

C. Saturation of water with $CaCO_3$

D. Saturation of water with $MgCO_3$.

Answer: A



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41. The atoms of different elements having same mass number but different atomic number are known as isobars.

The sum of protons and neutrons, in the isobars is always different.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: C



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42. Assertion: Compressibility factor for hydrogen varies with pressure with positive slope at all pressures.

Reason: Event at low pressures, repulsive forces dominate hydrogen gas.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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43. One mixing 500mL of $10^{-6}\text{M}\text{Ca}^{2+}$ ion and 500mL of $10^{-6}\text{M}\text{F}^{-}$ ion, no precipitate of CaF_2 will be obtained. $K_{sp}(\text{CaF}_2 = 10^{-18})$.

If K_{sp} is greater than ionic product, a precipitate will develop.

A. If both assertion and reason are true and the reason is the correct explanation of the

assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: C



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44. Assertion : Density of Mg is more than that of Ca .

Reason : It is due to the presence of $3d$ – orbital.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: C



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45. Assertion: Neopentane forms one mono substitutes compound

Reason: Neopentane is an isomer of pentane.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reason is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: B



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