



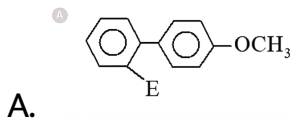
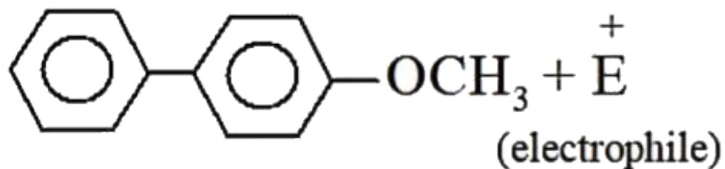
CHEMISTRY

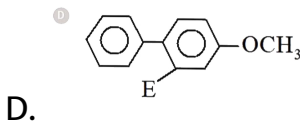
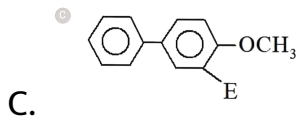
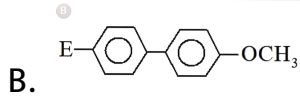
BOOKS - NTA MOCK TESTS

JEE MOCK TEST 12

Chemistry Single Choice

1. The major product formed in the reaction is:





Answer: C



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2. Enumerate the reactions of *D*-Glucose which cannot be explained by its open-chain structure.

A. (I)

B. (II)

C. (III)

D. All of above

Answer: D



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3. Ethylene dibromide on heating with metallic sodium in ether yields.

A. ethane

B. ethylene

C. 2-butene

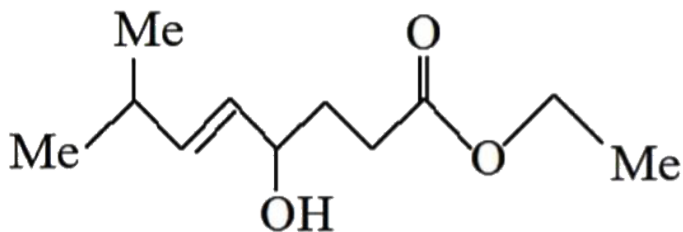
D. 1 - butene

Answer: C



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4. Write the IUPAC names of the following structures?



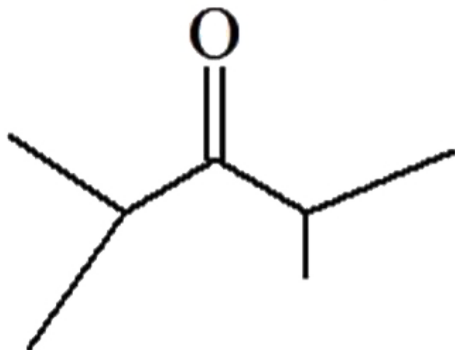
- A. Ethyle-2-hydroxy-6-methyloct-5-en-1-oate
- B. Ethyle-2-hydroxy-7-methyloct-4-en-1-oate
- C. Ethyle-1-hydroxy-7-methyloct-5-en-1-oate
- D. Ethyle-2-hydroxy-7-methyloct-5-en-1-oate

Answer: D



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5. Number of Deuterium exchange in the given tautomer when the compound is kept in $NaOD / D_2O$ for a long time is :



A. 2

B. 4

C. 6

D. 8

Answer: A



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6. Match the reactions given in column(I) with process/products in column (II) and select the proper code of choice from the choices given at the end.

(I)	(II)
(A) $\text{NaCl(aq)} \longrightarrow \text{Na}^+ + \text{Cl}^-$ $\text{Na}^+ + \text{e}^- \longrightarrow \text{Na(s)}$ $2\text{Cl}^- \longrightarrow \text{Cl}_2(\text{g}) + 2\text{e}^-$	p) Castner Kellner Cell
(B) $\text{NaCl(aq)} \longrightarrow \text{Na}^+_{\text{aq}} + \text{Cl}^-_{\text{aq}}$ $\text{Na}^+ + \text{e}^- \xrightarrow{\text{Hg}} \text{Na-Hg}$ $2\text{Cl}^- \longrightarrow \text{Cl}_2 + 2\text{e}^-$ $\text{Na-Hg} + \text{H}_2\text{O} \longrightarrow \text{NaOH} + \text{Hg} + \frac{1}{2}\text{H}_2$	q) Bleaching Powder
(C) $2\text{Ca(OH)}_2 + 2\text{Cl}_2 \longrightarrow \text{CaCl}_2 + \text{Ca(OCl)}_2 + 2\text{H}_2\text{O}$ (Slaked lime)	r) Solvay's Process
(D) $\text{NaCl} + \text{NH}_3 + \text{CO}_2 + \text{H}_2\text{O} \longrightarrow \text{NaHCO}_3 + \text{NH}_4\text{Cl}$ $2\text{NaHCO}_3 \longrightarrow \text{Na}_2\text{CO}_3 + \text{H}_2\text{O} + \text{CO}_2$	s) Down's Cell

A. $A \rightarrow (s), B \rightarrow (p), C \rightarrow (q), D \rightarrow (r)$

B. $A \rightarrow (r), B \rightarrow (p), C \rightarrow (s), D \rightarrow (q)$

C. $A \rightarrow (p), B \rightarrow (s), C \rightarrow (r), D \rightarrow (q)$

D. $A \rightarrow (r), B \rightarrow (q), C \rightarrow (p), D \rightarrow (s)$

Answer: A

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7. How many unit cells are present in 39 g of potassium that crystallises in body-centred cubic structure ?

A. $\frac{N}{4}$

B. $\frac{N}{2}$

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

D. N

Answer: B

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8. Nickel ($Z=28$) combines with a uninegative monodentate ligands to form a diamagnetic complex $[NiL_4]^{2-}$. The

hybridisation involved and the number of unpaired electrons present in the complex are respectively:

A. dsp^2 , zero

B. sp^3 , zero

C. dsp^2 , .one

D. sp^3 , two

Answer: A



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9. 1 mole of equimolar mixture of $Fe_2(C_2O_4)_3$ and FeC_2O_4 required X moles of $KMnO_4$ in acid medium for complete reaction. The value of X is:

A. 0.9

B. 0.6

C. 1.2

D. 0.8

Answer: A



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10. CN^- solution used in extraction of which metal?

A. Ag

B. Ti

C. Zn

D. Sn

Answer: A



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11. In a first order reaction, the concentration of the reactant, decreases from 0.8 M to 0.4 M in 15 minutes. The time taken for the concentration to change from 0.1 M to 0.025 M is :

- A. 30 minutes
- B. 15 minutes
- C. 7.5 minutes
- D. 60 minutes

Answer: A



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12. The atomic numbers of vanadium (V), Chromium (Cr), manganese (Mn) and iron (Fe) respectively 23, 24, 25 and 26.

Which one of these may be expected to have the higher second ionization enthalpy ?

A. Mn

B. V

C. Cr

D. Fe

Answer: C



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13. Which type of silicate compound, Beryl ($Be_3Al_2Si_6O_{18}$) is?

A. Chain silicate

B. Cyclic silicate

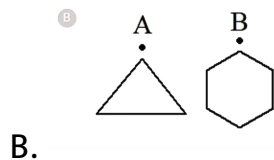
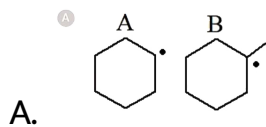
C. Planar silicate

D. Disilicate

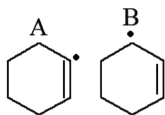
Answer: B

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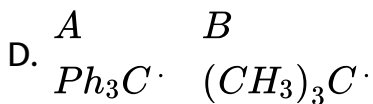
14. In which of the following pairs A is more stable than B?



c



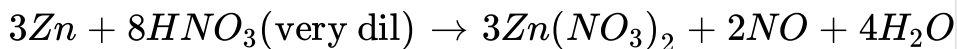
C.

**Answer: D****Watch Video Solution**

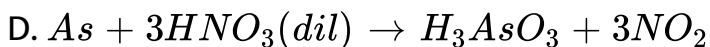
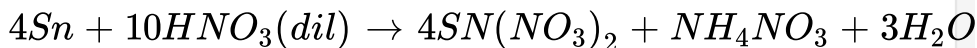
15. In which of the following reactions, the product(s) given is/are not correct?



B.



C.



Answer: B



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16. The energy of second Bohr orbit of the hydrogen atom is $-328kJmol^{-1}$, hence the energy of fourth Bohr orbit would be.

A. $-41kJmol^{-1}$

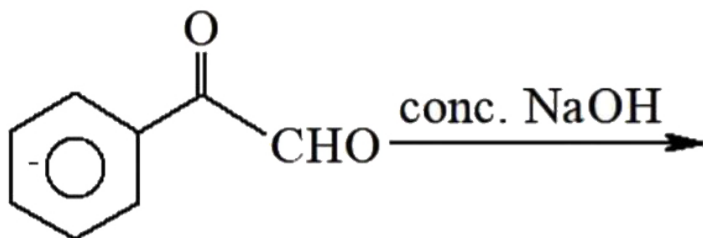
B. $-82kJmol^{-1}$

C. $-164kJmol^{-1}$

$$D. -1312 \text{ kJ mol}^{-1}$$

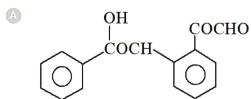
Answer: B

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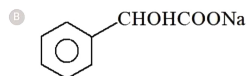


17.

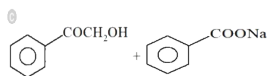
Product should be



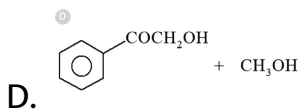
A.



B.



C.



Answer: B

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18. In XeF_2 , XeF_4 and $XeF_6(g)$ the number of lone pairs on Xe respectively are :

A. 2,3,1

B. 1,2,3

C. 4,2,1

D. 3,2,1

Answer: D

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19. The rates of diffusion of gases A and B of molecular weight 36 and 64 are in the ratio

A. 9: 16

B. 4: 3

C. 3: 4

D. 16: 9

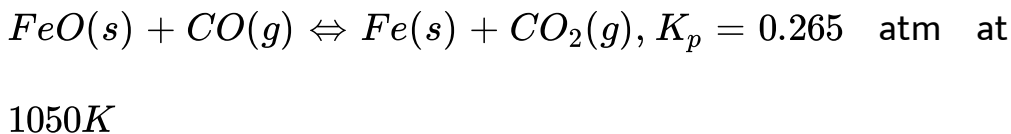
Answer: B



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20. One of the reaction that takes place in producing steel from iron ore is the reduction of iron(II) oxide by carbon

monoxide to give iron metal and CO_2 .



What are the equilibrium partial pressure of CO and CO_2 at $1050K$ if the partial pressure are: $p_{CO} = 1.4atm$ and $p_{CO_2} = 0.80atm$?

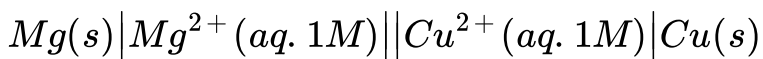
- A. $[P_{CO}] = 1.739 \text{ atm}$ and $P_{CO_2} = 0.461 \text{ atm}$
- B. $[P_{CO}] = 17.39 \text{ atm}$ and $P_{CO_2} = 0.461 \text{ atm}$
- C. $[P_{CO}] = 1.79 \text{ atm}$ and $P_{CO_2} = 0.46 \text{ atm}$
- D. $[P_{CO}] = 2.739 \text{ atm}$ and $P_{CO_2} = 0.461 \text{ atm}$

Answer: A



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1. For the electrochemical cell,



the standard emf of the cell is 2.70 V at 300 K. When the concentration of Mg^{2+} is changed to x M, the cell potential changes to 2.67 V at 300 K. The value of x is _____ .

(Given $\frac{F}{R} = 11500kV^{-1}$. where F is the Faraday constant and R is the gas constant, $\ln(10) = 2.30$)

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2. Among the compounds , Benzene, Carbon tetrachloride, Naphthalene, Benzoic acid, Isooctane and Anthracene, how many can be purified by sublimation.

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3. Number of incorrect statement are-

(A) The π bond between metal and carbonyl carbon reduces the bond order of C-O in carbon monoxide.

(B) dz^2 orbital of central metal atom/ion is used in dsp^2 hybridisation.

(C) CN^- is a π -acid Ligand.

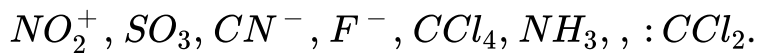
(D) All negative ligands are stronger than neutral ligands.

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4. How many of the following pollutants are considered as non-viable particulate pollutants? Smoke, dust, fungi, mists, moulds, algae, smog, bacteria, fumes.

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5. Total number of electrophiles present in the following are



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