AP EAMCET Chemistry Previous Questions with Key – Test 6

121) If the radius of electron orbit in the excited state of hydrogen atom is 476.1 pm, the energy of electron in that excited state in J is

(Radius and energy of electron in the first orbit of hydrogen atom are 52.9 pm and -2.18×10^{-18} J respectively)

1) -2.42×10^{-18}

2) -19.62×10^{-18}

3) -2.42×10^{-19}

4) -6.05×10^{-19}

122) A light of frequency 1.6×10^{16} Hz when falls on a metal plate emits electrons that have double the kinetic energy compared to the kinetic energy of emitted electrons when frequency of 1.0×10^{16} Hz falls on the same plate. The threshold frequency (ν_0) of the metal in Hz is

1) 1×10^{15}

2) 4×10^{15}

3) 3×10^{15}

4) 4×10^{13}

123)To which group and period does the element belong if the electronic configuration of an element in its -2 oxidation state is $1s^2 2s^2 2p^6 3s^2 3p^6$?

1)period 3, group 16

2)period 3, group 17

3)period 4, group 16

4)period 4, group 17

124)Which set of the following molecules has only one lone pair of electrons on their respective central atoms?

a) SO_2 b) XeF_4 c) $PbCl_2$ d) SF_4 e) ClF_3

1)a, c, d

2)b, c, d

3)a, b, e

4)a, c, e

125)XeF_4 is square planar where as CCl_4 is tetrahedral because

1)In XeF_4, 'Xe' is sp^2 hybridised and in CCl_4 'C' is sp^3 hybridised

2)In both XeF_4 and CCl_4 the central atom is sp^3 hybridised

3)In XeF_4, 'Xe' is sp^3d^2 hybridised but due to the presence of 2 lone pairs of electrons shape is square planar whereas in CCl_4 'C' is sp^3 hybridised

4)Xe is a noble gas, whereas C is a non-metal

126)16g each of H_2, He and O_2 are present in a container exerting 10 atm. Pressure at T(K). The pressure in atm exerted by 16g each of He and O_2 in the second container of same volume and temperature is

1)1.8

2)6.4

3)3.6

4)5.4

127)One litre of 0.15M Na_2SO_3 aqueous solution is mixed with 500 mL of 0.2M $K_2Cr_2O_7$ aqueous solution in acid medium. What is the number of moles of $K_2Cr_2O_7$ remaining in the solution after the reaction?

1)0.1

2)0.0125

3)0.025

4)0.05

128)From the following data

$$CH_3OH_{(l)} + \frac{3}{2}O_{2(g)} \rightarrow CO_{2(g)} + 2H_2O_{(l)};\ \Delta_r H^\circ = -726 kJ\ mol^{-1}$$

$$H_{2(g)} + \frac{1}{2}O_{2(g)} \rightarrow H_2O_{(l)};\ \Delta_r H^\circ = -286 kJ\ mol^{-1}$$

$$C_{(graphite)} + O_{2(g)} \rightarrow CO_{2(g)};\ \Delta_r H^\circ = -393 kJ\ mol^{-1}$$

The standard enthalpy of formation of $CH_3OH_{(l)}$ in K J mol^{-1} is

1)-239

2)239

3)547

4)-905

129)At 1000 K, the equilibrium constant, K_c for the reaction $2NOCl_{(g)} \rightleftharpoons 2NO_{(g)} + Cl_{2(g)}$ is 4.0×10^{-6} mol L^{-1}. The K_p (in bar) at the same temperature is

(R = 0.083 L bar K^{-1} mol^{-1})

1)3.32×10^{-6}

2)3.32×10^{4}

3)3.32×10^{-4}

4)3.32×10^{-3}

130)If the pK_a of acetic acid and pK_b of dimethylamine are 4.76 and 3.26 respectively, the pH of dimethyl ammonium acetate solution is

1)7.75

2)6.75

3)7.0

4)8.5

131)Which of the following statements are correct?

a) NaH(s) reacts violently with water to form NaOH and H_2

b) An example for electron rich hydride is NH_3

c) Nickel forms saline hydride

1)a, c

2)b,c

3)a, b, c

4)a, b

132)Which of the following nitrates on heating does not give its oxide?

1)$LiNO_3$

2)$NaNO_3$

3)$Ba(NO_3)_2$

4)$Be(NO_3)_2$

133)BF_3 reacts with NaH at 450K to form NaF and X. When X reacts with LiH in diethyl ether, Y is formed. What is Y?

1)$LiBO_2$

2)$Li_2B_4O_7$

3)$LiBH_4$

4)B_2H_6. LiH

134)Assertion (A): $[SiF_6]^{2-}$ is formed but $[SiCl_6]^{2-}$ is not

Reason (R) : Electronegativity (EN) of F is higher than EN of Cl

1)Both (A) and (R) are correct and (R) is the correct explanation of (A)

2)Both (A) and (R) are correct but (R) is not the correct explanation of (A)

3)(A) is correct but (R) is not correct

4)(A) is not correct but (R) is correct

135)The environmental friendly chemical now-a-days used for bleaching the paper in the presence of a suitable catalyst is

1)Chlorine

2)Sulphur dioxide

3)Hydrogen peroxide

4)Bleaching powder

136)The IUPAC name of the following compound is

1)5 - Cyanopentan - 2 – one

2)5 – Oxohexanenitrile

3)4 – Oxopentanenitrile

4)2 – Oxopentanenitrile

137)Identify the correct statements from the following

a. Petrol and CNG operated automobiles cause less pollution

b. Alkanes having tertiary hydrogen can be oxidized to alcohols by $KMnO_4$

c. Methane can be prepared by Kolbe's electrolytic method

d. Alkyl chloride on reduction with zinc and dilute hydrochloric acid gives alkane

1)b, c, d

2)a, b

3)a, b, d

4)c, d

138)What are X and Y in the following reaction?

$$Pent-2-ene \xrightarrow[(ii)Zn/H_2O]{(i)O_3} X+Y$$

1)X– CH_3CHO; Y– CH_3CH_2CHO

2)X– CH_3CH_2CHO; Y– CH_3CH_2CHO

3)X– CH_3CHO; Y– $(CH_3)_2CO$

4)X– CH_3CHO; Y– CH_3CHO

139)The total number of body centred lattices possible among the 14 Bravais lattices is

1)2 2)1 3)4 4)3

140)The measured osmotic pressure of a solution prepared by dissolving 17.4 mg of K_2SO_4 in 2L of water at 27°C is 3.735×10^{-3} bar. The van't Hoff factor is

(R = 0.083 L bar K^{-1} mol^{-1}; atomic weights K = 39; S = 32; O = 16)

1)2.84

2)3.0

3)2.0

4)2.32

141)Dissolving 120 g of a compound (mol.wt = 60) in 1000 g of water gave a solution of density 1.12g mL^{-1}. The molarity of solution is

1)1.0 M

2)2.0 M

3)2.5 M

4)4.0 M

142)When an aqueous solution of $CuCl_2$ is electrolysed using Pt inert electrodes, the reaction at cathode and anode respectively are

1) $4H_2O_{(l)} \xrightarrow{+4e^-} 2H_{2(g)} + 4\overline{O}H_{(aq)}; 2H_2O_{(l)} \xrightarrow{-4e^-} O_{2(g)} + 4H^+_{(aq)}$

2) $2Cu^{+2}{}_{(aq)} \xrightarrow{+4e^-} 2Cu_{(s)}; 2H_2O_{(l)} \xrightarrow{-4e^-} O_{2(g)} + 4H^+_{(aq)}$

3) $Cu^{+2}{}_{(aq)} \xrightarrow{+2e^-} Cu_{(s)}; 2Cl^-{}_{(aq)} \xrightarrow{-2e^-} Cl_{2(g)}$

4) $2H_2O_{(l)} \xrightarrow{+2e^-} H_{2(g)} + 2\overline{O}H_{(aq)}; 2Cl^-{}_{(aq)} \xrightarrow{-2e^-} Cl_{2(g)}$

143) Thermal decomposition of HCOOH is a first order reaction and the rate constant at T(K) is $4.606\times10^{-3}S^{-1}$. The time required to decompose 90% of initial quantity of HCOOH at T(K) in seconds is

1)100

2)500

3)1000

4)50

144)Which one of the following statements is not correct?

1)A mixture of dinitrogen and dioxygen at room temperature is an example for aerosol

2)Lyophilic sols are more stable compared to lyophobic sols

3)Formation of micelles is possible only above Kraft temperature

4)An example for a soap is sodium stearate and an example for detergent is sodium lauryl sulphate

145)In Ellingham diagram, the plot is drawn between

1)Temperature, ΔH°

2)Temperature, ΔG°

3)Pressure, ΔS°

4)Temperature, ΔE°

146)Identify the reaction which does not liberate N_2

1) $NaN_3 \xrightarrow{\Delta} ?$

2) $(NH_4)_2 Cr_2O_7 \xrightarrow{\Delta} ?$

3) $NH_4Cl + Ca(OH)_2 \rightarrow ?$

4) $Ba(N_3)_2 \xrightarrow{\Delta} ?$

147)Identify the molecule which contains lone pair of electrons on the sulphur atom

1)H_2SO_5

2)$H_2S_2O_8$

3)$H_2S_2O_7$

4)H_2SO_3

148)Which statement about noble gases is not correct?

1)'Xe' forms XeF_6 under suitable conditions

2)'Ar' is used in electric bulbs

3)The number of lone pair of electrons present on Xe in XeF_2 is 3.

4)'He' has the highest boiling point among all the noble gases

149)Crystal field splitting energies for octahedral (Δ_0) and tetrahedral (Δ_t) geometries caused by the same ligands are related through the expression

1)$\Delta_0 = \Delta_t$

2)$4\Delta_0 = 9\Delta_t$

3)$9\Delta_0 = 4\Delta_t$

4)$\Delta_0 = 2\Delta_t$

150)In Lanthanide series, the element well known to exhibit +4 oxidation state is

1)Lu

2)Ce

3)Pm

4)Nd

151)In anionic polymerization, the compound which acts as effective chain initiator is

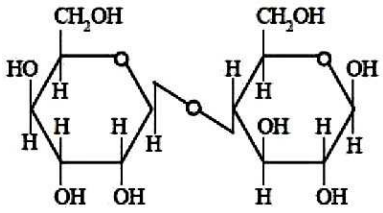
1)BF_3

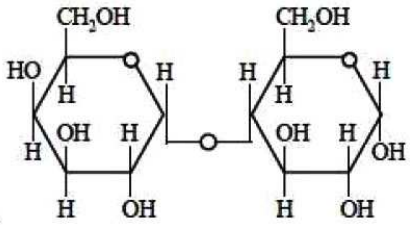
2)$(CH_3CO)_2O_2$

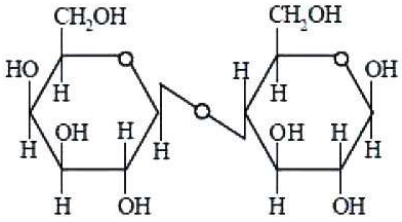
3)$SnCl_2$

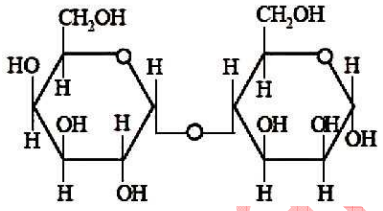
4)R-Li

152)Which one of the following is the structure of lactose?

1) 

2) 

3) 

4) 

153)Which of the following statements are correct?

a) Drugs that mimic natural messenger by switching on the receptor are called agonists

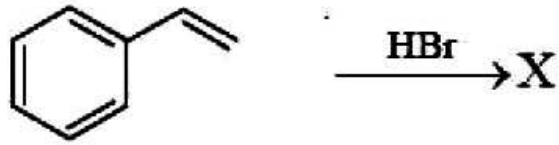
b) Shape of the receptor does not change after attachment of chemical messenger

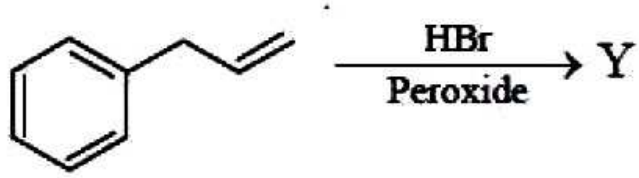
c) A cationic detergent is formed when stearic acid reacts with polyethylene glycol

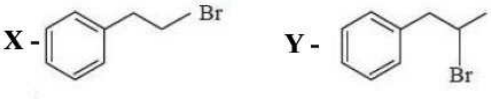
d) Seldane is an antihistamine

1)b, c 2)a, c, d 3)a, d 4)a, b, c

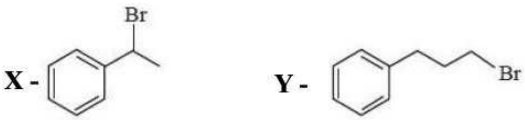
154)Identify the major products X and Y in the following reactions

a) 

b) 

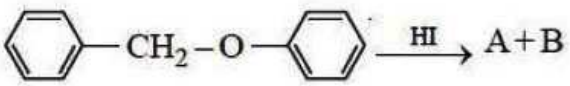
1) 

2) 

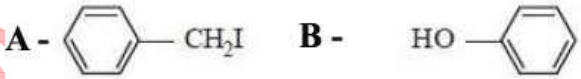
3) 

4) 

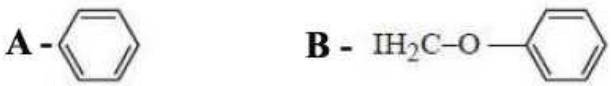
155)Identify A and B in the following reactions



1) 

2) 

3) 

4) 

156)Identify A, B and C in the following reactions

$$Isopropyl\ chloride \xrightarrow{NaoH} A \xrightarrow{Cu/573K} B \xrightarrow{NaOI} C + Iodoform$$

	A	B	C
1.	$CH_3CH_2CH_2OH$	$CH_3CH_2CH_2CHO$	CH_3CH_2COONa
2.	CH_3CH_2OH	CH_3CHO	$HCOONa$
3.	$CH_3-\underset{\underset{OH}{\vert}}{CH}-CH_3$	CH_3COCH_3	CH_3COONa
4.	$CH_3-\underset{\underset{OH}{\vert}}{CH}-\underset{\underset{OH}{\vert}}{CH}-CH_3$	$H_3C-\overset{\overset{O}{\Vert}}{C}-\overset{\overset{O}{\Vert}}{C}-CH_3$	CH_3COONa

1)1 2)2 3)3 4)4

157)Match the following

List –I	List –II
A) Lucas reagent	I) $SnCl_2$ + HCl, H_3O^+
B) Clemmensen reagent	II) $[Ag(NH_3)_2]+$
C) Tollens' reagent	III) Anhydrous $ZnCl_2$ | conc.HCl
D) Stephen reaction	IV) Zn – Hg | conc.HCl
	V) $C_6H_5SO_2Cl$

The correct answer is

1)A – III, B-IV, C-II, D-I

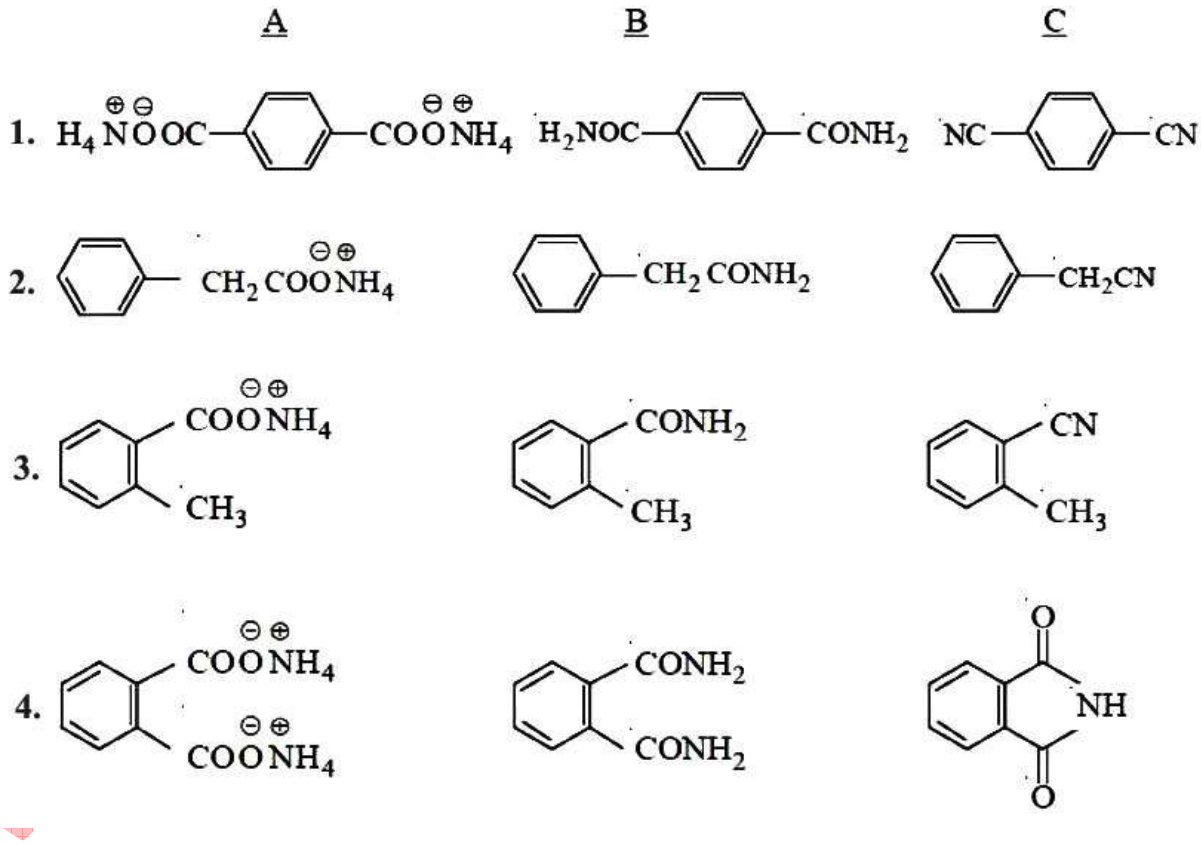
2)A – III, B-IV, C-I, D-II

3)A – IV, B-II, C-III, D-V

4)A – IV, B-III, C-I, D-V

158)What are A, B and C in the following reactions?

$$Phthalic\ acid + NH_3 \rightarrow A \xrightarrow{\Delta} B \xrightarrow{High\ temperature} C$$



1)1 2)2 3)3 4)4

159)What are A and B in the following reaction sequence?

$$propionitrile + A \rightarrow B \xrightarrow{H_3\overset{+}{O}} propiophenone$$

	A	B
1.	C_2H_5MgBr	$CH_3CH_2-\overset{\overset{NMgBr}{\|}}{C}-C_2H_5$
2.	C_2H_5MgBr	$CH_3CH_2CH_2-\overset{\overset{NH}{\|}}{C}-C_2H_5$
3.	C_6H_5MgBr	$CH_3CH_2-\overset{\overset{NMgBr}{\|}}{C}-C_6H_5$
4.	$C_6H_5CH_2MgBr$	$CH_3CH_2CH_2-\overset{\overset{NH}{\|}}{C}-CH_2C_6H_5$

1)1 2)2 3)3 4)4

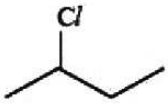
160) $C_2H_5Cl \xrightarrow{KCN} X \xrightarrow{H_2/Catalyst} Y \xrightarrow[alc.KOH]{CHCl_3} Z$

What is 'Z' in the above sequence of reactions?

1) 

2) 

3) 

4) 

APEAMCET-2018 Engineering Stream Final Key Date: 22-04-18 FN (Shift 1)	
121	3
122	2
123	1
124	1
125	3
126	3
127	4
128	1
129	3
130	1
131	4
132	2
133	3
134	2
135	3
136	2
137	3
138	1
139	4
140	2
141	2
142	3
143	2
144	1
145	2
146	3
147	4
148	4
149	2
150	2
151	4
152	3
153	3
154	3
155	2
156	3
157	1
158	4
159	3
160	1