AP EAMCET Chemistry Previous Questions with Key – Test 7

121) The wavelength corresponding to electronic transition between two orbits of hydrogen atom is $912\overset{o}{A}$. The wavelength (in $\overset{o}{A}$) for the same electronic transition in Li^{2+} is

 1) 101.3

 2) 202.6

 3) 303.9

 4) 50.65

122) The ratio of lowest energy in terms of wave numbers of Balmer and Lyman series of lines of atomic spectrum of hydrogen is

 1) 5:27

 2) 27:5

 3) 20:27

 4) 27:2

123) Which of the following represents the correct order of ionic radii?

 1) $Al^{3+} > Mg^{2+} > Na^+ > O^{2-} > F^-$

 2) $O^{-2} > F^- > Na^+ > Mg^{2+} > Al^{3+}$

 3) $Mg^{2+} > Al^{3+} > O^{2-} > F^- > Na^+$

 4) $O^{2-} > F^- > Al^{3+} > Mg^{2+} > Na^+$

124) The species, which has the bond order same as that of F_2 molecule is

 1) O_2^+

 2) O_2^{2-}

 3) O_2

 4) N_2^+

125) The hybridization of atom 'X' with atomic number 27 in $[XF_6]^{3-}$ is

 1) dsp^2 2) d^2sp^3 3) sp^3d^2 4) sp^3

126) The temperature of 4.0 moles of a gas occupying $5 dm^3$ at 3.32 bar is

$(R = 0.083$ bar $dm^3 K^{-1} mol^{-1})$

    1) 25 K

    2) 50 K

    3) 75 K

    4) 100 K

127) To 50 mL of 0.1 N Na_2CO_3 solution 150 mL of water is added. What is the molarity of resultant solution?

    1) $\dfrac{M}{40}$

    2) $\dfrac{M}{20}$

    3) $\dfrac{M}{80}$

    4) $\dfrac{M}{30}$

128) Match the following

List – I	List-II
A) At constant volume the change in internal energy of a system	I) $W = -2.303 nRT \log \dfrac{V_f}{V_i}$
B) Isothermal irreversible change	II) $W_{adia} = \Delta U$
C) Isothermal reversible change	III) $q_v = \Delta U$
D) Adiabatic change	IV) $W = -P_{ex} (V_f - V_i)$
	V) $\Delta U = \Delta H - \Delta nRT$

The correct answer is

    1) A – V; B – III; C - IV; D – I   2) A – IV; B – I; C - III; D - V

    3) A – III; B – IV; C - I; D – II   4) A – III; B – V; C - I; D - II

129) The pH of a buffer solution formed by mixing 30 mL of 0.1 M NH_4OH and 30 mL of 1 MNH_4Cl solutions is 8.6. The pK_b of NH_4OH is

    1) 5.4

    2) 4.4

    3) 5.6

    4) 4.2

130) The solubility products of three sparingly soluble salts AB, A_2B and AB_3 are respectively 4.0×10^{-20}, 3.2×10^{-11} and 2.7×10^{-31}. The increasing order of their solubility is

    1) $AB < AB_3 < A_2B$

    2) $AB_3 < AB < A_2B$

    3) $A_2B < AB_3 < AB$

    4) $A_2B < AB < AB_3$

131) Identify the correct statements from the following

a) Zn reacts with dilute HCl and aqueous NaOH solution separately and liberates hydrogen

b) Ti and Zr form interstitial hydrides

c) The viscosity of H_2O is more than the viscosity of D_2O

    1) a, b, c

    2) a, c

    3) a, b

    4) b, c
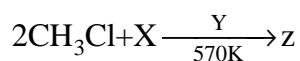
132) What are X, Y and Z in the following reactions?

$$CaCO_3 \underset{}{\overset{\Delta}{\rightleftharpoons}} CO_2 + X$$

$$X + H_2O \longrightarrow Y$$

$$Y + Cl_2 \longrightarrow Z$$
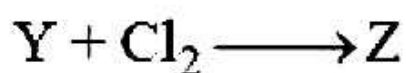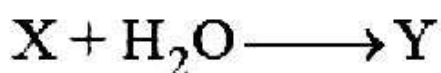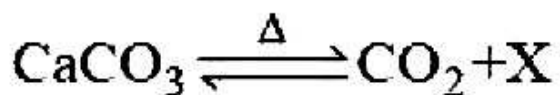
1)X – CaO;   Y – Ca(OH)$_2$;   Z - CaOCl$_2$.H$_2$O

2)X – CaO;   Y – Ca(OCl)$_2$;   Z – Ca(OH)$_2$

3)X – Ca(OCl)$_2$; Y – Ca(OH)$_2$; Z - CaO

4)X – Ca(OH)$_2$; Y – CaO;   Z – Ca(OCl)$_2$

133) Identify the correct set of 13th group elements which do not form amphoteric oxides

 1)B, In, Tl

 2)B, Al, Ga

 3)Al, Ga, Tl

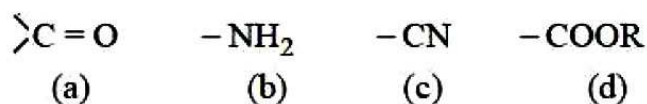 4)Al, Tl, In

134) Identify X, Y and Z in the following reaction

$$2CH_3Cl + X \xrightarrow[570K]{Y} Z$$

 1)X – C;   Y – Ni; Z – (CH$_3$)$_2$Si(OH)$_2$

 2)X – Si;   Y – Zn; Z – (CH$_3$)$_2$SiCl$_2$

 3)X – Si; Y – Cu; Z – (CH$_3$)$_2$SiCl$_2$

 4)X – H$_2$O; Y – Si; Z – (CH$_3$)$_2$Si(OH)$_2$
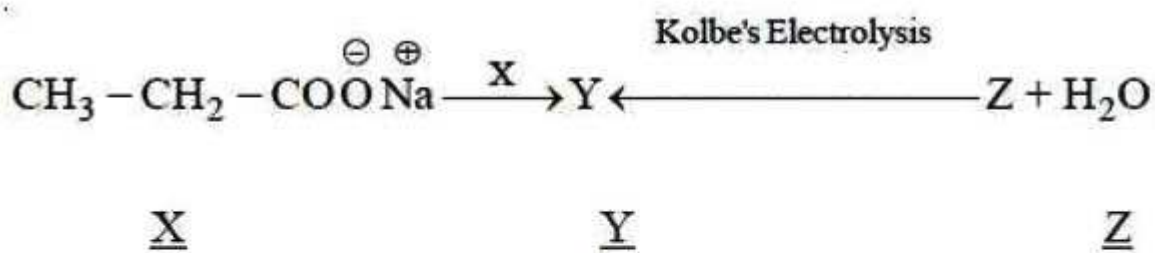
135) Which of the following is not a greenhouse gas?

 1)CO$_2$

 2)O$_3$

 3)CH$_4$

 4)N$_2$

136) The order of priority of the following functional groups in IUPAC method of naming organic compounds is

$$\underset{(a)}{>C=O} \quad \underset{(b)}{-NH_2} \quad \underset{(c)}{-CN} \quad \underset{(d)}{-COOR}$$

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

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

137) What are X, Y and Z in the following reactions?

$$CH_3 - CH_2 - \overset{\ominus}{C}\overset{\oplus}{OO}\, Na \xrightarrow{\ X\ } Y \xleftarrow{\ \text{Kolbe's Electrolysis}\ } Z + H_2O$$

	X	Y	Z
1.	$NaOH + CaO/\Delta$	$CH_3CH_2CH_2CH_3$	$CH_3CH_2\overset{\ominus}{C}\overset{\oplus}{OO}\,Na$
2.	Mo_2O_3	C_2H_6	$CH_3CH_2\overset{\ominus}{C}\overset{\oplus}{OO}\,Na$
3.	$NaOH + CaO/\Delta$	C_2H_6	$CH_3\overset{\ominus}{C}\overset{\oplus}{OO}\,Na$
4.	$(CH_3COO)_2Mn/\Delta$	C_3H_8	$CH_3CH_2\overset{\ominus}{C}\overset{\oplus}{OO}\,Na$

1) 1

2) 2

3) 3

4) 4

138) Which one of the following compounds will not show geometrical isomerism?

1) Prop -2-enoic acid

2) 2-butene

3) 2-methyl-2-butenoic acid

4) 3-methyl-2-pentenoic acid

139)A compound is formed by X and Y elements. Atoms of Y(anions) form hcp lattice. Atoms of X(cations) are in some octahedral holes. The formula of the compound is XY_3. What is the fraction of octahedral holes unoccupied by X?

    1)$\dfrac{1}{2}$

    2)$\dfrac{2}{3}$

    3)$\dfrac{3}{4}$

    4)$\dfrac{1}{5}$

140)At T(K), the vapour pressure of pure benzene is 0.85 bar. A non-volatile, non-electrolyte substance weighing 0.5g when added to 39g of benzene, the vapour pressure of the solution is 0.845 bar. The molar mass (in g mol^{-1}) of the substance is

    1)180

    2)270

    3)160

    4)169

141)0.1m solution each of sodium sulphate, urea and sodium chloride are taken. The correct ratio of elevation of boiling point of these solutions is

    1)1 : 1 : 1

    2)3 : 1 : 2

    3)1 : 2 : 3

    4)2 : 3 : 1

142)Using the standard electrode potentials given below identify the correct statements from the following

$Fe^{2+}+2e^- \rightarrow Fe; E^o = -0.44V$

$Cu^{2+}+2e^- \rightarrow Cu; E^o = +0.34V$

$Ag^{+}+e^- \rightarrow Ag; E^o = +0.80V$

a) Copper can displace iron from $FeSO_4$ solution

b) Iron can displace copper from $CuSO_4$ solution

c) Silver can displace copper from $CuSO_4$ solution

d) Iron can displace silver from $AgNO_3$ solution

1) a, b

2) b, c

3) b, d

4) a, d

143) At T(K) if the rate constant for a zero order reaction is 2.5×10^{-3} Ms^{-1}, the time required for the initial concentration of reactant, R to fall from 0.10 M to 0.075M at the same temperature in seconds is

1) 25

2) 5

3) 10

4) 20

144) The temperature above which, formation of micelles takes place is called

1) Boyle's temperature

2) Kraft temperature

3) Critical temperature

4) Inversion temperature

145) The method used for producing semiconductor grade metals of high purity is

1) Poling

2) Electrolysis

3) Zone refining

4) Vapour phase refining

146)The element X on reaction with conc. HNO_3 forms two acidic oxides A and B of different shapes. Element Z on reaction with conc. H_2SO_4 forms two acidic oxides A and D of different shapes. What are X and Z?

    1)C, C

    2)S, Cu

    3)C, S

    4)C, Cu

147)Identify the correct statement from the following

    1)O_3, SO_2 molecules have different shapes

    2)The molecular formula of pyrosulphuric acid is $H_2S_2O_8$

    3)In the presence of moisture, SO_2 acts as an oxidizing agent

    4)V_2O_5 acts as catalyst in contact process

148)Identify the reaction in which monobasic and dibasic acids are formed

    1)$FeSO_4 + H_2SO_4 + Cl_2 \rightarrow$

    2)$Na_2S_2O_3 + Cl_2 + H_2O \rightarrow$

    3)$Na_2SO_3 + H_2O + Cl_2 \rightarrow$

    4)$SO_2 + 2H_2O + Cl_2 \rightarrow$

149)Catalyst used in the manufacture of high density polythene is

    1)MnO_2

    2)V_2O_5

    3)$TiCl_4$ & $(C_2H_5)_3Al$

   4)$PdCl_2$

150)Identify the correct statements from the following

a) Eu^{2+} and Yb^{2+} are reducing agents

b) The electronic configuration of Pr^{3+} is $[Xe]\ 4f^3$

c) Aqueous solution of $LaCl_3$ is colourless.

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

151) The polydispersity index of a polymer containing 10 molecules with molecular mass 1.0×10^4 and 10 molecules with molecular mass 1.0×10^5 is approximately

    1) 1.67

    2) 0.59

    3) 1.55

    4) 0.83

152) β - D – (-) – Fructofuranose is

1)

2)

3)

4)
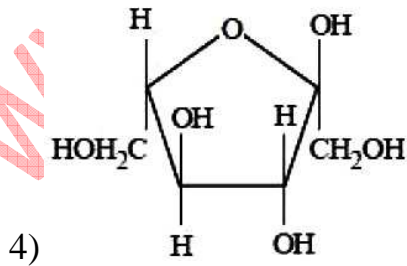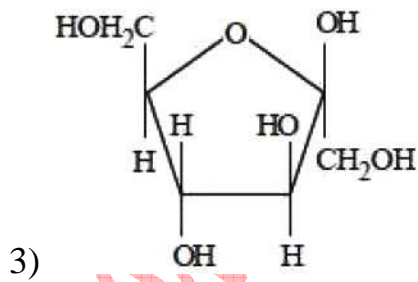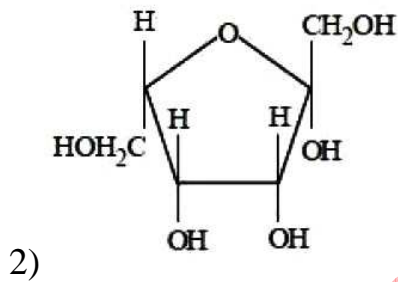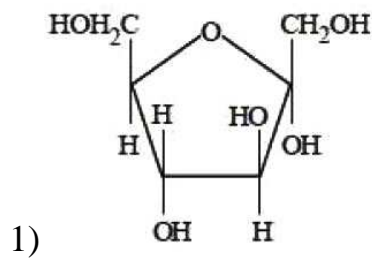
153) Assertion (A): Shape of the receptor changes after attachment of chemical messenger

Reason (R) : Receptor does not regain original shape after removal of chemical messenger

The correct answer is

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

    2)(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
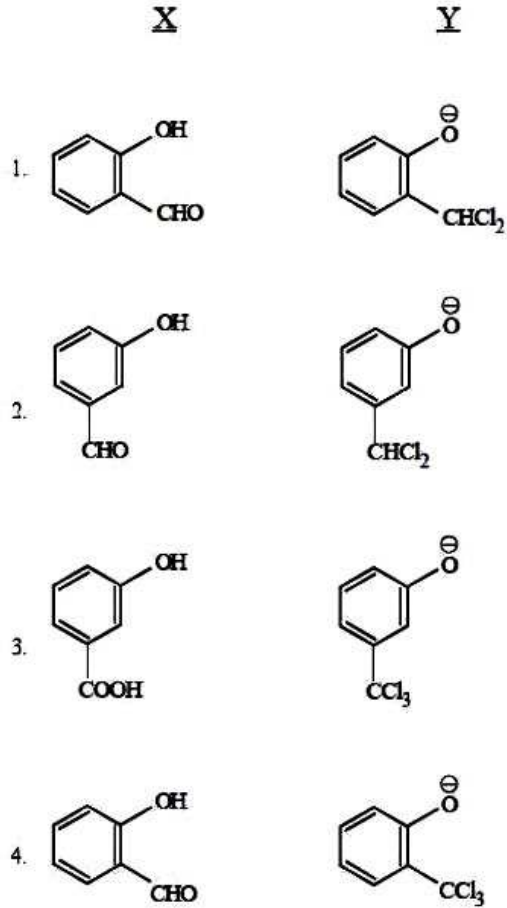
154) Identify chiral molecules from the following
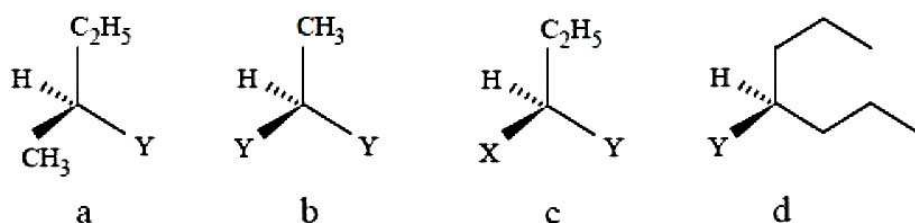
    1)a, c

    2)b, c, d

    3)b, c

    4)b, d

155) Isopropyl benzene on aerial oxidation followed by acid hydrolysis of the resulting compound yields

    1)$(CH_3)_2$ CO, $C_6H_5 - C_6H_5$

    2)$(CH_3)_2$ CO, $C_6H_5CH_3$

    3)$(CH_3)_2$ CO, C_6H_5OH

    4)$(CH_3)_2$ CHOH, $C_6H_5 CH_3$

156) Reimer-Tiemann reaction involves the formation of <u>X</u> from phenol through the intermediate <u>Y</u>. What are <u>X</u> and <u>Y</u>
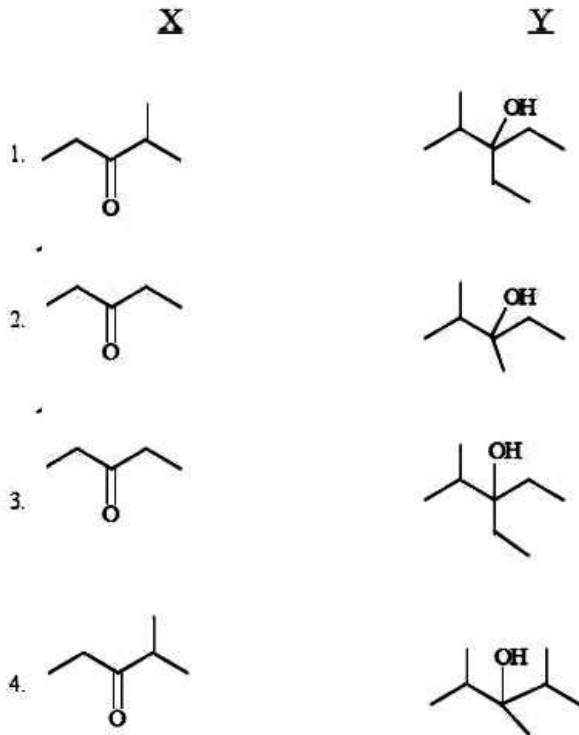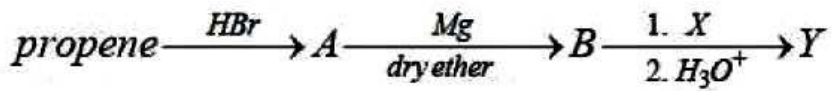

1) 1

2) 2

3) 3

4) 4

157) What are X and Y in the following reaction sequence?

$$propene \xrightarrow{HBr} A \xrightarrow[dry\ ether]{Mg} B \xrightarrow[2.\ H_3O^+]{1.\ X} Y$$

1) 1

2) 2

3) 3

4) 4

158) The hydrogen atom bonded to the carbon designated by which number in

$$\overset{4}{C}H_3\text{-}\overset{3}{C}H_2\text{-}\overset{2}{C}H_2\text{-}\overset{1}{C}HO \text{ is most acidic?}$$

1) C - 4

2) C - 2

3) C - 3

4) C -1

159) The order of strengths of the following carboxylic acids is

a) CH_3-CH_2-COOH
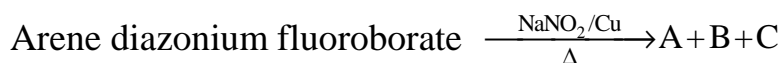
b) CH_3-COOH

c) C_6H_5-COOH

d) $C_6H_5-CH_2COOH$

    1) c > d > b > a

    2) d > b > c > a

    3) c > b > d > a

   4) a > d > b > c

160) What are A, B and C in the following reaction?

Arene diazonium fluoroborate $\xrightarrow[\Delta]{NaNO_2/Cu} A + B + C$

    1) A– ArN = Nar;   B – N_2;   C – $NaBF_4$

    2) A– $ArNO_2$;   B – N_2;   C – $NaBF_4$

    3) A– ArNO;   B – N_2;   C – $NaBF_4$

   4) A– ArF;   B – NaN_3;   C – BF_3

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