

AP EAMCET Chemistry Previous Questions with Key – Test 8

121) The ratio of de Broglie wave lengths of two particles, having mass ratio 1 : 3 and kinetic energy ratio 2 : 1 is

- 1) 3 : 2
- 2) $\sqrt{3} : \sqrt{2}$
- 3) $\sqrt{2} : \sqrt{3}$
- 4) 2 : 3

122) If uncertainties in the measurement of position and momentum of a microscopic object of mass 'm' are equal, then the uncertainty in the measurement of velocity is given by the expression

- 1) $\sqrt{\frac{h}{4\pi m}}$
- 2) $\sqrt{\frac{h}{4\pi}} \times \frac{1}{m}$
- 3) $\frac{h}{4\pi} \times \sqrt{\frac{1}{m}}$
- 4) $\sqrt{\frac{h}{2\pi m}}$

123) In lanthanides, with increase in atomic number atomic radius decreases, except for the element X, what X?

- 1) Gd
- 2) Eu
- 3) Tm
- 4) Dy

124) Dipole moment order of which of the following pairs of molecules is not correct?

- 1) HF > HCl
- 2) H₂S > CO₂
- 3) NH₃ > NF₃
- 4) CH₄ > CHCl₃

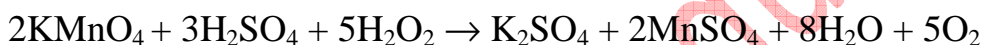
125) X and Y are the two covalent molecules in which the hybridization of the central atoms is same, but shapes are different. X and Y are

- 1) XeF₄, NH₃
- 2) XeF₂, PF₅
- 3) BF₃, H₂O
- 4) CH₄, BeCl₂

126) At same temperature and pressure, the rate of diffusion of gas 'X' is $3\sqrt{3}$ times that of a gaseous hydrocarbon of molar mass 54 g mol⁻¹. The molar mass of X in g mol⁻¹ is

- 1) 16
- 2) 2
- 3) 32
- 4) 28

127) From the given reaction



Find the normality of H₂O₂ solution, if 20 mL of it is required to react completely with 16 mL of 0.02 M KMnO₄ solution. (Molar mass of KMnO₄ = 158 g mol⁻¹)

- 1) 4×10^{-2} N
- 2) 2×10^{-2} N
- 3) 6×10^{-2} N
- 4) 8×10^{-2} N

128) At the temperature T(K) for the reaction $\text{X}_2\text{O}_{4(l)} \rightarrow 2\text{XO}_{2(g)}$ $\Delta U = x \text{ kJ mol}^{-1}$, $\Delta S = y \text{ J k}^{-1} \text{ mol}^{-1}$. Gibbs energy change for the reaction is

(Assume X₂O₄, XO₂ are ideal gases)

- 1) $1000x + 2R(T - y) \text{ J mol}^{-1}$
- 2) $1000x + T(2R - y) \text{ J mol}^{-1}$
- 3) $x + T(2R - y) \text{ J mol}^{-1}$
- 4) $x + 2R(T - y) \text{ J mol}^{-1}$

129) Arrange the aqueous solutions of the following salts in the increasing order of pH



I

II

III

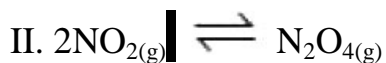
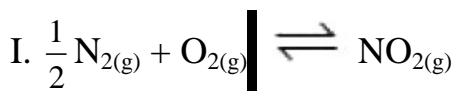
1) I < II < III

2) I < III < II

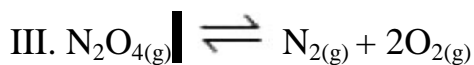
3) III < II < I

4) II < III < I

130) For the gaseous reactions (I) and (II), the equilibrium constants are X and Y respectively.



Using the above reactions the equilibrium constant Z for the reaction (III) given below is



1) Z = XY

2) $Z = \frac{Y^2}{X}$

3) $Z = \frac{1}{XY^2}$

4) $Z = \frac{1}{X^2Y}$

131) Match the following

List - I

A) Electron deficient hydride

B) Electron precise Hydride

C) Electron rich hydride

D) Saline hydride

List-II

I) CH₄

II) B₂H₆

III) CaH₂

IV) NiH_{0.6}

V) PH₃

The correct answer is

1)A – III; B – IV; C – II; D - V

2)A – II; B – I; C – III; D - IV

3)A – V; B – II; C – III; D – IV

4)A – II; B – I; C – V; D - III

132)Be and Al show similarities in properties due to diagonal relationship except in the property X given below. What is X?

1)Both form basic oxides and hydroxides

2)Ions of both have strong tendency to form complexes

3)In vapour phase chlorides of both have Cl⁻ bridged chloride structure

4)Chlorides of both are soluble in organic solvents

133)In the structure of B₂H₆, the number of BH₂ groups present in one plane, and the number of B-H bonds, B-B bonds, B-H-B bridge bonds are respectively

1)2, 0, 3, 2

2)3, 2, 2, 2

3)2, 4, 0, 2

4)2, 4, 2, 0

134)Identify the incorrect statements from the following

I. Tin in +2 state acts as reducing agent while lead in +4 state acts as strong oxidizing agent

II. Silicon exists as both [SiF₆]²⁻ and [SiCl₆]²⁻ forms

III. The hybridization of carbon in fullerene is sp³

IV. Among Ge, Sn and Pb lowest melting point is for Sn

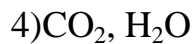
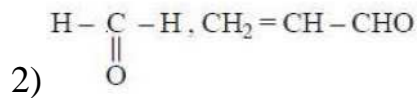
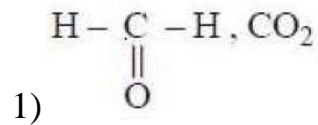
1)I, IV

2)II, IV

3)II, III

4)III, IV

135) Methane of the polluted air reacts with ozone and forms the compounds



136) Assertion (A): Propene on addition with hydrogen bromide in the presence of peroxide gives 1-Bromopropane as the major product

Reason (R): 1-Bromopropane is the major product because it is formed through the stable carbocation

The correct answer is

- 1) (A) and (R) are correct, (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

139) A metal crystallizes in two phases, one as fcc and other as bcc with unit cell edge lengths of 3.5 \AA and 3.0 \AA respectively. The ratio of density of fcc and bcc phases approximately is

- 1) 1.5 : 1.0
- 2) 1.0 : 1.5
- 3) 1.26 : 1
- 4) 1 : 1.26

140) When 36g of a non-volatile, non-electrolytic solute having the empirical formula CH_2O is dissolved in 1.2kg of water, the solution freezes at -0.93°C . The molecular formula of the solute is (K_f of water = $1.86 \text{ K kg mol}^{-1}$)

- 1) CH_2O
- 2) $\text{C}_2\text{H}_4\text{O}_2$
- 3) $\text{C}_3\text{H}_6\text{O}_3$
- 4) $\text{C}_4\text{H}_8\text{O}_4$

141) Benzene and toluene form an ideal solution over the entire range of composition. The vapour pressure of pure benzene and toluene at T(K) are 50mm Hg and 40mm Hg respectively. What is the mole fraction of toluene in vapour phase when 117g of benzene is mixed with 46g of toluene? (molar mass of benzene and toluene are 78 and 92g mol^{-1} respectively)

- 1) 0.78
- 2) 0.2
- 3) 0.64
- 4) 0.35

142) The rate equation for a first order reaction is given by $[\text{R}] = [\text{R}]_0 e^{-kt}$. A straight line with positive slope is obtained by plotting

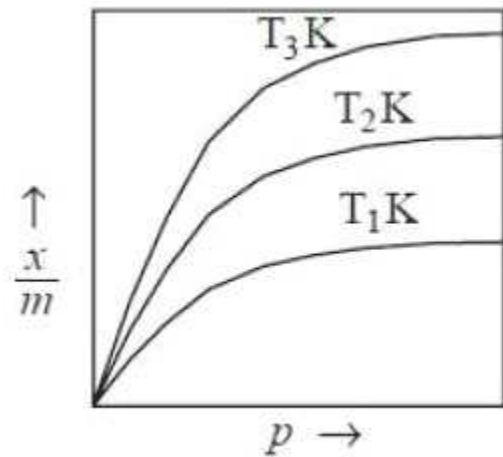
($[\text{R}]_0$ = Initial concentration of reactant, $[\text{R}]$ = concentration of reactant at time, t)

- 1) $\log \frac{[\text{R}]_0}{[\text{R}]}$ Vs time
- 2) $[\text{R}]$ Vs time
- 3) $\log [\text{R}]$ Vs time
- 4) $\log \frac{[\text{R}]}{[\text{R}]_0}$ Vs time

143) For the oxidation of 0.2M FeSO₄ solution 0.965 amperes current is passed through it for 1 hour. The volume of the solution that is oxidized in mL is

- 1) 70
- 2) 80
- 3) 60
- 4) 90

144) Freundlich adsorption isotherms for the physical adsorption of a gas at temperature T₁, T₂ and T₃ are shown in the graph given below. The correct relationship between T₁, T₂ and T₃ is



- 1) T₁ < T₂ < T₃
- 2) T₃ < T₁ < T₂
- 3) T₃ < T₂ < T₁
- 4) T₂ < T₁ < T₃

145) The ore which is concentrated by leaching

- 1) PbS
- 2) Al₂O₃, 2H₂O
- 3) SnO₂
- 4) Fe₂O₃

146) Hot concentrated sulphuric acid on reaction with which one of the following elements, produces two gaseous products?

- 1) C
- 2) S
- 3) Cu
- 4) Zn

147) The pair of xenon compounds which have same number of lone pairs of electrons on the central atom is

- 1) XeO_3 , XeF_6
- 2) XeF_2 , XeF_4
- 3) XeF_4 , XeO_3
- 4) XeF_4 , XeOF_4

148) Which of the following statements are correct?

I) P_4 molecule is very reactive because of angular strain

II) The basicity of H_3PO_3 is 3

III) In gas phase, all P-Cl bonds of PCl_5 have same bond length

IV) In solid state, PCl_5 exists as an ionic solid, in which anion $[\text{PCl}_6]^-$ has octahedral and cation $[\text{PCl}_4]^+$ has tetrahedral shape.

- 1) I & II
- 2) II & IV
- 3) I & IV
- 4) I & III

149) Arrange the following ligands in the order of increasing field strength

H_2O	CO	NH_3	I^-	F^-
I	II	III	IV	V

- 1) $\text{IV} < \text{V} < \text{I} < \text{III} < \text{II}$
- 2) $\text{IV} < \text{V} < \text{III} < \text{II} < \text{I}$
- 3) $\text{V} < \text{IV} < \text{III} < \text{I} < \text{II}$
- 4) $\text{IV} < \text{I} < \text{V} < \text{II} < \text{III}$

150) For which one of the following elements, $\text{M}^{3+} | \text{M}^{2+}$ standard electrode potential is more positive?

- 1) V
- 2) Cr
- 3) Mn
- 4) Fe

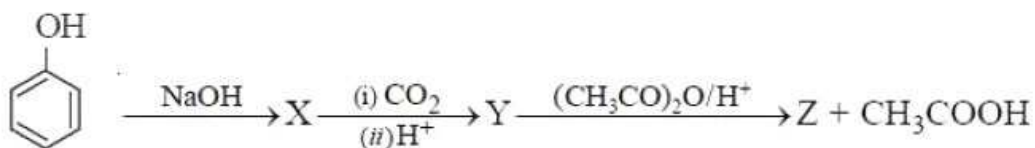
151) Which one of the following structures represents the neoprene rubber?

1. $\text{[-CH}_2\text{-C(Cl)=CH-CH}_2\text{]}_n$
2. $\text{[-CH}_2\text{-CH=CH-CH}_2\text{-CH}_2\text{-CH(CN)-]}_n$
3. $\text{[-NH-CO-NH-CH}_2\text{]}_n$
4. $\text{[-OCH}_2\text{-CH}_2\text{OOC-C}_6\text{H}_4\text{-CO-]}_n$

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

152) The type of bond connecting two nucleotides is

- 1) Peptide bond
- 2) Hydrogen bond
- 3) Phosphodiester bond
- 4) Glycosidic bond



153)

The correct statements about Z from the following are

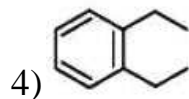
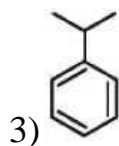
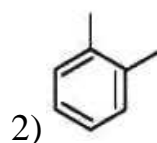
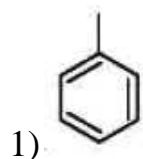
- I) It is o-Hydroxybenzoic acid
- II) It is a non-narcotic analgesic
- III) It acts as antipyretic
- IV) It acts as antihistamine

- 1) II & III
- 2) I & IV
- 3) II & IV
- 4) I & II

154) Identify the halogen exchange reaction from the following

- 1) Finkelstein reaction
- 2) Sandmeyer reaction
- 3) Fitting reaction
- 4) Wurtz - Fittig reaction

155) Which of the following structures represents cumene?



156) In which of the following reactions, benzaldehyde is formed from benzoyl chloride and hydrogen in the presence of Pd-BaSO₄?

- 1) Stephen reaction
- 2) Etard reaction
- 3) Gatterman – Koch reaction
- 4) Rosenmund reduction reaction

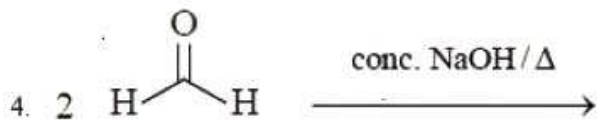
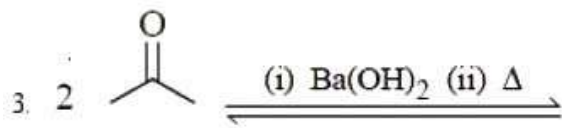
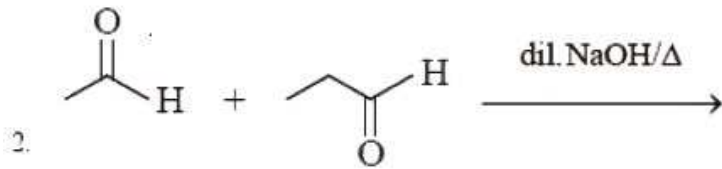
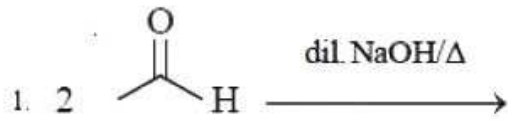
157) The reagent used for the conversion of allyl alcohol to propenal is

- 1) O₃/H₂O – Zn dust
- 2) DIBAL - H
- 3) CrO₂Cl₂/H₃O⁺
- 4) C₅H₅NH⁺ CrO₃Cl⁻

158) The compound which does not respond to iodoform test is

- 1) CH₃ - CHO
- 2) CH₃ CH (OH) CH₃
- 3) C₂H₅ – CO – C₂H₅
- 4) C₆H₅COCH₃

159) Which of the following reactions does not represent the aldol condensation reaction?



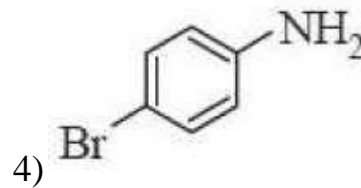
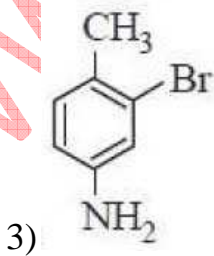
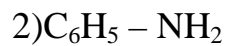
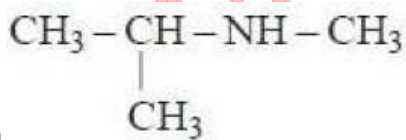
1) 1

2) 2

3) 3

4) 4

160) The amine which does not react with chloroform and ethanolic potassium hydroxide is



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121	2
122	2
123	2
124	4
125	2
126	2
127	4
128	2
129	2
130	4
131	4
132	1
133	3
134	3
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136	3
137	4
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154	1
155	3
156	4
157	4
158	3
159	4
160	1