

TS EAMCET Chemistry Previous Questions with Key – Test 5

121) The wavelength (in Δ) of a photon having energy 3 eV is approximately

[1 eV = 1.6×10^{-12} erg]

[h = 6.26×10^{-27} ergs]

1)3000

2)4000

3)4141

4)7824

122)Which of the following set of radiations cannot be seen in hydrogen atomic spectrum?

a) γ -radiation

b)UV

c)X-rays

d)Infrared

1)a, c, d

2)c, d

3)a, c

4)a, d

123)Which of the following are correct?

a)First ionization enthalpy of He < second ionization enthalpy of Li

b)Li has the highest second ionization enthalpy

- c) All d-block elements are transition elements
- d) The only alphabet not found in the periodic table is the letter 'J'
- e) Francium concentration is $\sim 10^{-18}$ ppm on Earth

- 1) a, b, d
- 2) a, b, d, e
- 3) a, b, e
- 4) d, e

124) The correct increasing order of ionization enthalpy of He, Li^+ , Be^{2+} is

- 1) $\text{He} < \text{Li}^+ < \text{Be}^{2+}$
- 2) $\text{Be}^{2+} < \text{Li}^+ < \text{He}$
- 3) $\text{Li}^+ < \text{Be}^{2+} < \text{He}$
- 4) $\text{Be}^{2+} < \text{He} < \text{Li}^+$

125) The hybridization of N in NO_2^+ , NO_3^- and NH_4^+ respectively is

- 1) sp , sp^2 , sp^3
- 2) sp , sp^3 , sp^3
- 3) sp^2 , sp^3 , sp^3
- 4) sp , sp , sp^3

126) The bond orders of He_2^+ and He_2 are respectively

- 1) $\frac{1}{2}$, 0 2) 0, $\frac{1}{2}$ 3) 0, 1 4) 1, 0

127) Kinetic energy in kJ of 280 g of N_2 at $27^\circ C$ is approximately ($R = 8.314 \text{ J mol}^{-1} \text{ K}^{-1}$)

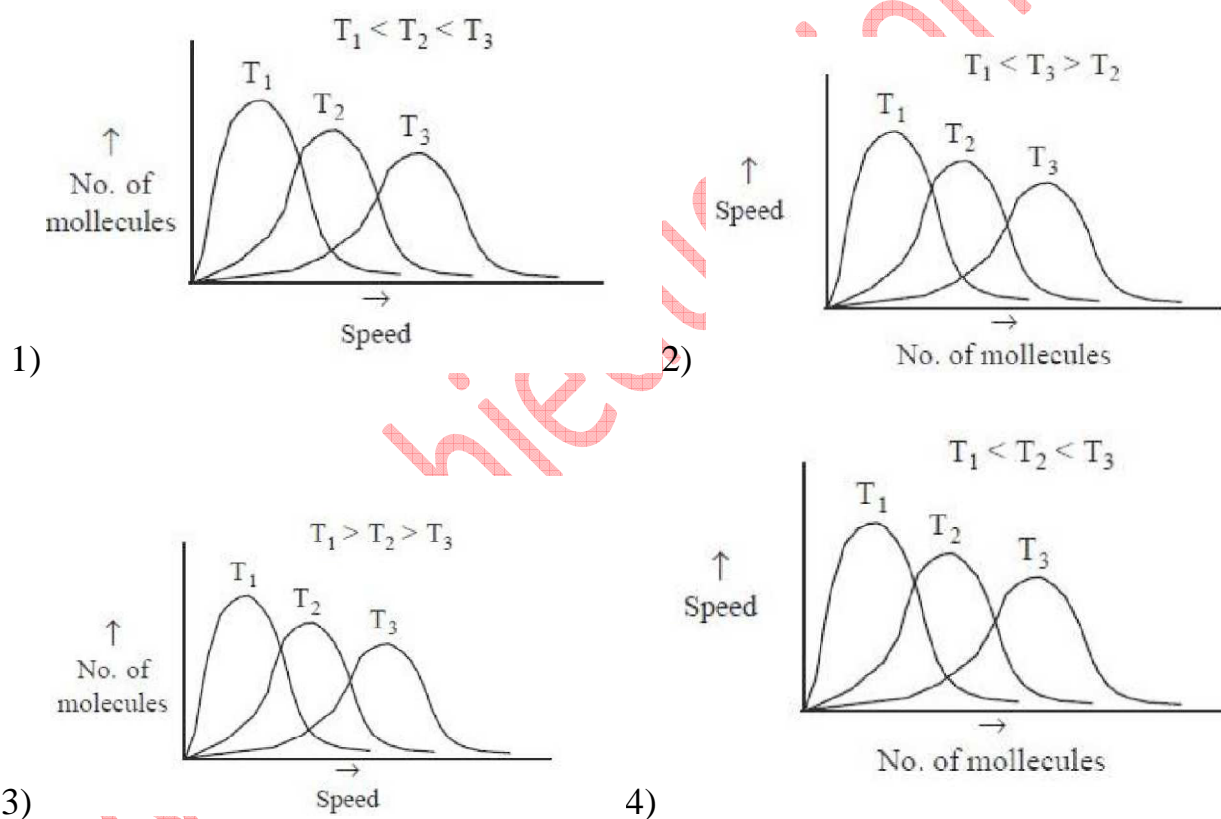
1) 18.7

2) 37.4

3) 56.1

4) 74.8

128) The correct plot of Maxwell-Boltzmann distribution at different temperatures (T) is



129) $CaCO_3$ reacts with HCl to produce $CaCl_2$, CO_2 and H_2O . The approximate mass (in g) of $CaCO_3$ required to react completely with 25 mL of 0.75 M HCl is

(atomic mass of $Ca = 40$, $C = 12$, $O = 16$, $Cl = 35.5$ and $H = 1$)

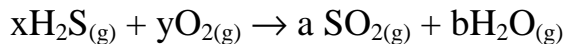
1) 94

2) 9.4

3) 0.94

4) 0.094

130) Calculate the approximate mass (in g) of H_2S required for the following reaction when 15 L of oxygen at STP reacts completely.



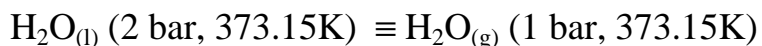
1) 12.11

2) 15.16

3) 34.12

4) 68.24

131) For the following process



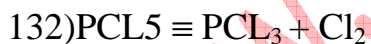
Identify the correct set of thermodynamic parameters

1) $\Delta G = 0$, $\Delta S = +ve$

2) $\Delta G = 0$, $\Delta S = -ve$

3) $\Delta G = +ve$, $\Delta S = 0$

4) $\Delta G = -ve$, $\Delta S = +ve$



If the equilibrium constant (K_c) for the above reaction at 500 K is 1.79 and the equilibrium concentration of PCl_5 and PCl_3 are 1.41 M and 1.59 M, respectively, then the concentration of Cl_2 is approximately

1) 1.26 M

2) 3.59 M

3) 0.59 M

4) 1.59 M

133) What is the pH of acetic acid at equilibrium, given that acetic acid concentration 0.1M and its 30% dissociated at equilibrium. ($\log 3 = 0.47$)

- 1) 2.00
- 2) 1.53
- 3) 3.53
- 4) 3.00

134) Assertion (A): Ferricyanide ion oxidizes H_2O_2 to H_2O in basic medium

Reason (R): Oxidation product of H_2O_2 is O_2

- 1) Both (A) and (R) are true and (R) is the correct explanation of (A)
- 2) Both (A) and (R) are true, but (R) is the not correct explanation of (A)
- 3) (A) is true, but (R) is false
- 4) (A) is false, but (R) is true

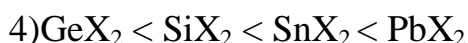
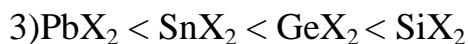
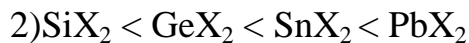
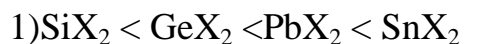
135) Highest melting point among the following is displayed by

- 1) Be
- 2) Ca
- 3) Sr
- 4) Ba

136) Diborane reacts with ammonia to form X, which on heating give H_2 and borazine. X is

- 1) $[\text{BH}_2(\text{NH}_3)_2]^+ [\text{BH}_4]^-$ 2) $\text{B}_3\text{N}_3\text{H}_6$ 3) $\text{BH}_3 \cdot \text{NH}_3$ 4) $[\text{BH}(\text{NH}_3)_3]^+ [\text{BH}_4]^-$

137) The stability of dihalides of Si, Ge, Sn and Pb follows the sequence



138) Which of the following statements about smog is/are correct?

a) Smog formed on sunny days contain oxidizing molecules

b) Photochemical smog contain many reactive molecules

c) The main polluting components of smog are oxides of carbon

d) The presence of carbon monoxide in air leads to the formation of ozone is smog

1) a, c

2) a, b

3) b, d

4) Only b

139) Which of the following statements about TLC are correct?

a) Glycine is identified on TLC plate due to its colour

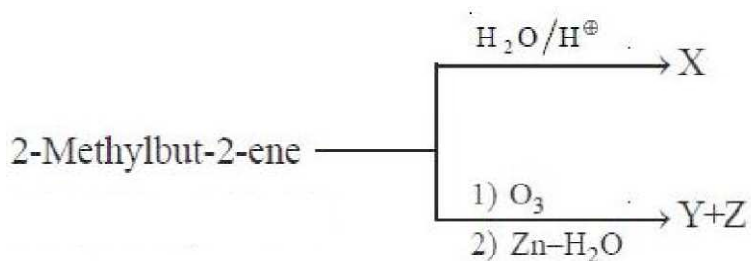
b) Amino acids can be detected by spraying the TLC plate with Ninhydrin solution

c) The retardation factor is the ratio of the distance travelled by the solute to that of the solvent from the base line

d) Sodium chloride is commonly used as an adsorbent

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

140) Identify X, Y and Z in the following reactions



- | | | | |
|----|---|---|---|
| 1) | X
$(\text{H}_3\text{C})_3\text{CCH}_2\text{OH}$ | Y
CH_3CHO | Z
$\text{CH}_3\text{CH}_2\text{CHO}$ |
| 2) | X
$(\text{H}_3\text{C})_2\text{CHCH}(\text{OH})\text{CH}_3$ | Y
$(\text{CH}_3)_2\text{CO}$ | Z
$(\text{CH}_3)_2\text{CO}$ |
| 3) | X
$(\text{H}_3\text{C})_2\text{C}(\text{OH})\text{CH}_2\text{CH}_3$ | Y
$(\text{CH}_3)_2\text{CO}$ | Z
CH_3CHO |
| 4) | X
$\text{CH}_3\text{CH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_3$ | Y
$\text{CH}_3\text{CH}_2\text{CHO}$ | Z
CH_3COOH |

141) Which of the following statements are correct with respect to benzene?

- a) It forms triozone with O_3
- b) It is non-planar
- c) It forms only one monosubstituted product with CH_3COCl in the presence of anhyd. AlCl_3
- d) It forms hexachlorobenzene on heating with Cl_2 under photochemical condition

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

142) A compound having element X and Y crystallizes in a cubic structure, where X is at the corner position and Y is at the center of the cube. The correct formula of the compound is

- 1) XY
- 2) X₃Y
- 3) XY₂
- 4) XY₃

143) If the degree of association is 70% for the reaction $2A \rightleftharpoons (A)_2$, the van't Hoff factor for the solute 'A' is

- 1) 0.30
- 2) 0.70
- 3) 0.35
- 4) 0.65

144) 0.1 mol of NaCl is dissolved in 100 g of water. The mole fraction of NaCl is

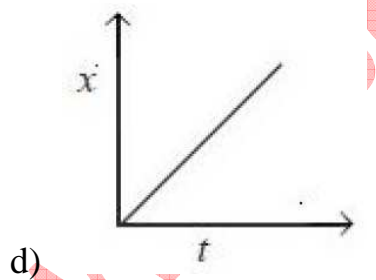
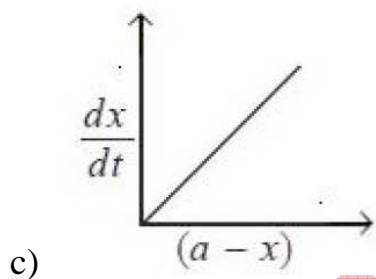
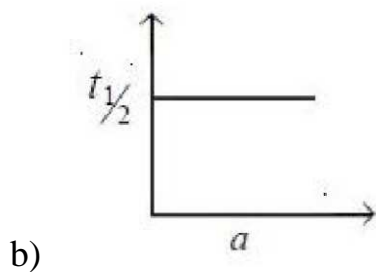
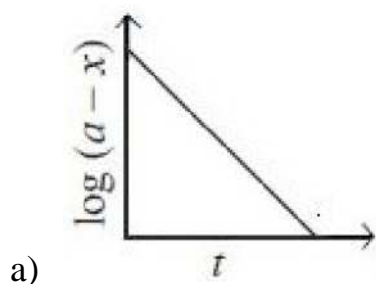
- 1) 0.0213
- 2) 0.0177
- 3) 0.2290
- 4) 0.0330

145) What is the approximate standard free energy change per mole of Zn (in kJ mol⁻¹) for a Daniel cell at 298K?

- 1) -212.3 2) 230.0 3) 0.0 4) -1.10

146) Which of the following graphs represent a first order reaction

(a = initial concentration of reactant, x = concentration of reactant consumed, t = time)



1) a, b, d

2) c, d

3) b, c

4) a, b

147) In the Freundlich isotherm $\left(\frac{x}{m} = kP^{1/n}\right)$ plot of $\log \frac{x}{m}$ vs $\log p$, the intercept is (where x, m, p and k are mass of the gas, mass of adsorbent, pressure and constant which depend on the nature of the adsorbent, respectively)

1) k

2) $\log k$

3) e^k

4) $\ln \frac{1}{k}$

148) Which of the following element is extracted using I_2 as the reactant?

1) Ni

2) Zr

3) Al

4) Cu

149) The equatorial and axial P-Cl bonds lengths (in pm) respectively in PCl_5 are

1) 202, 240

2) 240, 202

3) 200, 400

4) 200, 410

150) In reaction (1), XeF_6 hydrolysis to form HF and X. In reaction (2), XeF_6 on partial hydrolysis form HF, and Z.

The products X, Y, Z respectively, are

- 1) XeO_3 , Xe, XeO_2F_2
- 2) XeO_3 , XeOF_4 , XeO_2F_2
- 3) XeO_3 , XeOF_4 , XeO_2F_2
- 4) XeO_3 , O_2 , XeO_2F_2

151) Ethylenediamine (en)

- 1) Monodentate ligand and can occupy one position in coordination polyhedron
- 2) Bidentate ligand and can occupy two positions in coordination polyhedron
- 3) Polydentate ligand
- 4) Tridentate ligand and occupy three positions in coordination polyhedron

152) Which one of the following is square planar in structure and has diamagnetic property?

- 1) $[\text{Ni}(\text{H}_2\text{O})_6]^{2+}$
- 2) $[\text{Ni}(\text{CN})_4]^{2-}$
- 3) $[\text{Ni}(\text{CN})_4]^{2-}$
- 4) $[\text{NiCl}_4]^{2-}$

153) Examples for natural polymers are

- 1) Cotton, Silk, Bakelite and Wool
- 2) Cellulose, Polystyrene and Neoprene
- 3) Nylon, Terylene and PVC
- 4) Silk, Cotton and Proteins

154) Which one of the following statements is correct?

- 1) Starch on complete hydrolysis gives Fructose
- 2) Lactose on hydrolysis gives Glucose and Fructose
- 3) Glucose on slow oxidation to CO_2 and H_2O by enzyme does not liberate energy
- 4) Cellulose is not digestible in the human body

155) The drug tetracycline is

- | | |
|------------------|--------------------|
| 1) an antibiotic | 2) an antimalarial |
| 3) an antiseptic | 4) an analgesic |

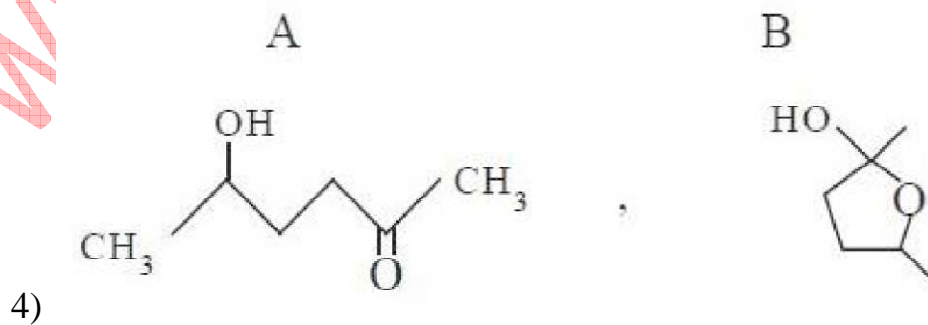
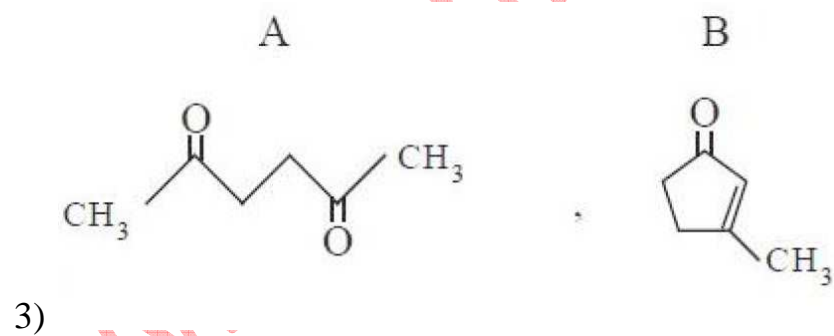
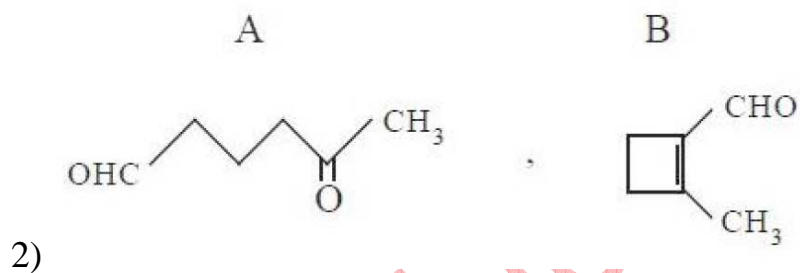
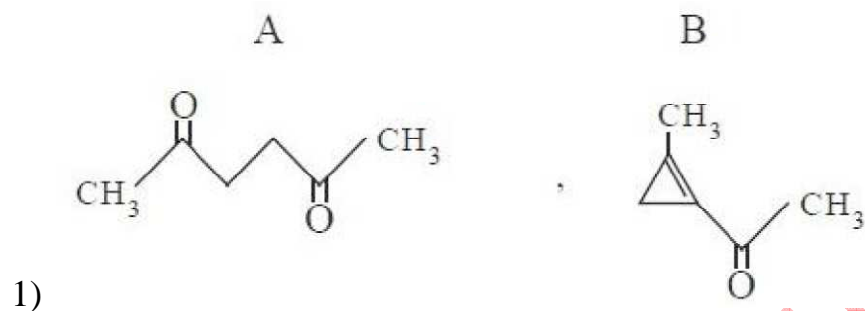
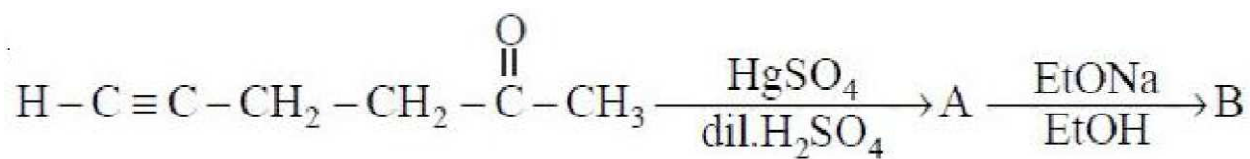
156) Which of the following statements is correct for optically active alkyl halides, upon reaction with nucleophiles?

- | | |
|--|---|
| 1) $\text{S}_{\text{N}}1$ - Retention of configuration | $\text{S}_{\text{N}}2$ - Inversion of configuration |
| 2) $\text{S}_{\text{N}}1$ - racemisation | $\text{S}_{\text{N}}2$ - Inversion of configuration |
| 3) $\text{S}_{\text{N}}1$ - Inversion of configuration | $\text{S}_{\text{N}}2$ - Retention of configuration |
| 4) $\text{S}_{\text{N}}1$ - Racemisation | $\text{S}_{\text{N}}2$ - Retention of configuration |

157) Which one of the following reactions gives phenol as a major product?

- 1) Reaction of benzene with conc. HNO_3 and conc. H_2SO_4
- 2) Reaction of Aniline with NaNO_2/HCl in warm water
- 3) Reaction of benzene with Hot water
- 4) Sodium salt of benzoic acid with soda lime Reaction

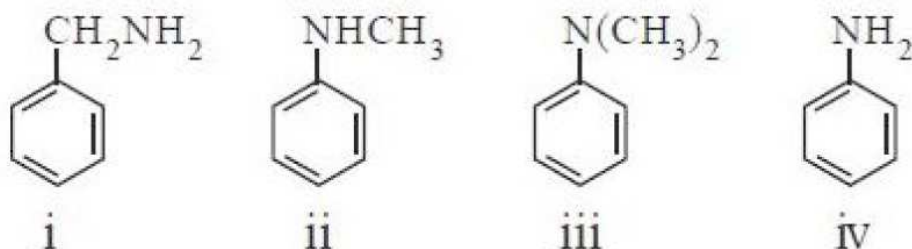
158) The products "A" and "B" of the below reaction sequence are



159) The strongest acid among the following is

- 1) Acetic acid
- 2) Acrylic acid
- 3) Benzoic acid
- 4) Propionic acid

160) The order of basicity among the following nitrogen compounds is



- | | |
|----------------------|----------------------|
| 1) iv > i > iii > ii | 2) iii > i > iv > ii |
| 3) ii > i > iii > iv | 4) i > iii > ii > iv |

TS EAMCET 2018 Engineering Stream Final Key Date: 07-05-2018 FN (Shift 1)	
121	3
122	3
123	2
124	1
125	1
126	1
127	2
128	1
129	3
130	2
131	1
132	4
133	2
134	4
135	1
136	1
137	2
138	2
139	1
140	3
141	3
142	1
143	4
144	2
145	1
146	4
147	2
148	2
149	1
150	2
111	2
152	3
153	4
154	4
155	1
156	2
157	2
158	3
159	3
160	4