

TS EAMCET Chemistry Previous Questions with Key – Test 3

121) In a photoelectric effect experiment, the kinetic energy of an emitted electron is 1.986×10^{-19} J, when a radiation of frequency $1.0 \times 10^{15} \text{ s}^{-1}$ hits the metal. What is the threshold frequency of the metal (in s^{-1})?

(Planck's constant = 6.62×10^{-34} Js)

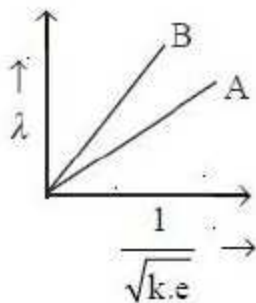
1) 7.0×10^{14}

2) 5.8886×10^{14}

3) 7.0×10^{-15}

4) 7.0×10^{15}

122) The following plot represents the deBroglie wavelength as function of the kinetic energy (k.e) of two particles A and B. Identify the correct relation



1) $m_A = m_B$

2) $m_A < m_B$

3) $m_A > m_B$

4) $m_A = m_B$

123) The correct option for the first ionization enthalpy (in kJ mol^{-1}) of Li, Na, K and Cs respectively is

- 1) 496, 520, 419, 374
- 2) 374, 419, 496, 520
- 3) 520, 496, 419, 374
- 4) 374, 419, 520, 496

124) Which of the following statements about BF_4^- and AlF_6^{3-} are correct?

- a) B and Al differ in their oxidation states.
- b) B and Al differ in their covalency
- c) B obeys the octet rule
- d) B and Al are in diagonal relationship

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

125) Statement (a): CO_2 has no dipole moment, whereas SO_2 and H_2O have dipole moment.

Statement (b): SnCl_2 is ionic, whereas SnCl_4 is covalent.

Which of the following is correct?

- 1) Both (a) and (b) are not correct
- 2) (a) is correct but (b) is not correct
- 3) Both (a) and (b) are correct
- 4) (a) is not correct but (b) is correct

126) Assertion(A): Xe atoms in XeF_2 are $d^2 sp^3$ hybridised.

Reason (R): XeF_2 molecule does not follow octet rule.

- 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 not the correct explanation of (A)
- 3) (A) is true, but (R) is false
- 4) (A) is false, but (R) is true

127) 12cm^3 of $\text{SO}_{2(g)}$ diffused through a porous membrane in 1 minute, Under similar conditions 120cm^3 of another gas diffused in 5 minutes. The molar mass of the gas in g mol^{-1} is

- 1) 32
- 2) 18
- 3) 44
- 4) 16

128) 1 mole of gas A and 1 mole of gas B at 27°C were pumped into a 24.6 L volume pre-evacuated isolated flask. The catalyst coated inside the flask catalyzes the following reaction

$\text{A}_{(g)} + \text{B}_{(g)} \rightarrow 2\text{D}_{(g)}$ The kinetic energy of D is 98.03 L atm.

Calculate the pressure realized at the end of the reaction.

- 1) 1.66 atm
- 2) 2.66 atm
- 3) 5.33 atm
- 4) 4.33 atm

129) 28 g KOH is required to completely neutralize CO₂ produced on heating 60 g of impure CaCO₃. The percentage purity of CaCO₃ is approximately

(molar masses of KOH and CaCO₃ are 56 and 100 g mol⁻¹, respectively)

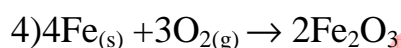
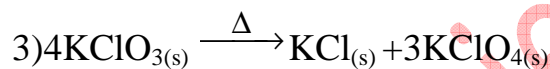
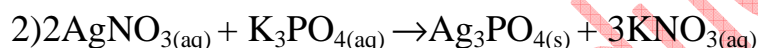
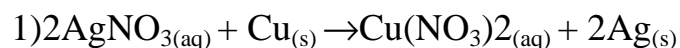
1) 41.6

2) 40

3) 20.8

4) 83.3

130) Which one of the following is a disproportionation reaction?



131) The standard enthalpy of formation of CO_(g), CO_{2(g)}, N_{2O(g)}, and N_{2O_{4(g)}} are respectively -10, -393, 81, and -10 kJ mol⁻¹. Enthalpy change (in kJ) of the following reaction is



1) -1058

2) +1058

3) -957

4) +957

132) Consider the following reaction in a 1 L closed vessel. $N_2 + 3H_2 \rightleftharpoons 2NH_3$

1) 3600.00

2) 3657.14

3) 2657.14

4) 1828.57

133) If the solubility product of $Ni(OH)_2$ is 4.0×10^{-15} , the solubility (in $mol L^{-1}$) is

1) 5.0×10^{-5}

2) 4.0×10^{-5}

3) 2.0×10^{-5}

4) 1.0×10^{-5}

134) Identify the reactions in which H_2 is liberated

a) $Zn + NaOH_{(aq)} \rightarrow$

b) $HCOOH \xrightarrow[\text{conc. } H_2SO_4]{373K}$

c) $CH_{4(g)} + H_2O_{(g)} \xrightarrow[Ni]{1270K}$

d) $Zn + H^+_{(aq)} \rightarrow$

e) $C_{(s)} + H_2O_{(g)} \xrightarrow{1270K}$

1) a, c, d, e

2) a, b, c, d

3) b, c, d, e

4) a, b, c, e

135) BeH_2 can be prepared by the reaction of

- 1) BeCl_2 with LiAlH_4
- 2) Be with H_2
- 3) Be with water
- 4) Be with liquid ammonia

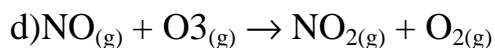
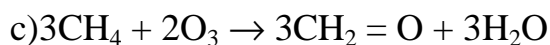
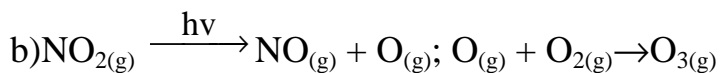
136) AlCl_3 in water at $\text{pH} < 7$ forms

- 1) tetrahedral $\text{Al}(\text{OH})_4^-$ ions
- 2) Octahedral $\text{Al}(\text{OH})_6^{3-}$ ions
- 3) Square planar $\text{Al}(\text{OH})_6^{3-}$
- 4) Octahedral $\text{Al}(\text{OH}_2)_6^{3+}$ ions

137) Which of the following is known as silicone?

- 1) Polymer of $\left(\begin{array}{c} \text{R} \\ | \\ \text{Si} - \text{Cl} \\ | \\ \text{R} \end{array} \right)$
- 2) Polymer of $\left(\begin{array}{c} \text{R} \\ | \\ \text{Si} - \text{O} \\ | \\ \text{R} \end{array} \right)$
- 3) Polymer of SiO_2
- 4) Polymer of $[\text{SiO}_4]^{4-}$

138) Identify the reactions that occur in photochemical smog



1) b, c, d

2) a, b, c

3) a, b, d

4) a, c, d

139) IUPAC name of isoprene is

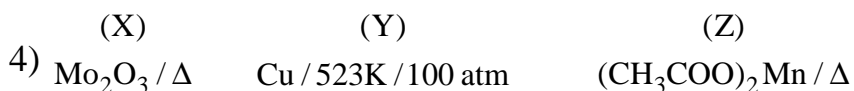
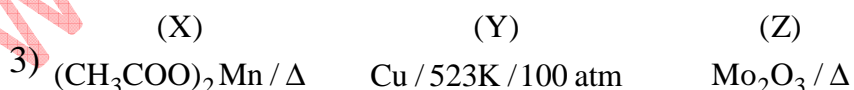
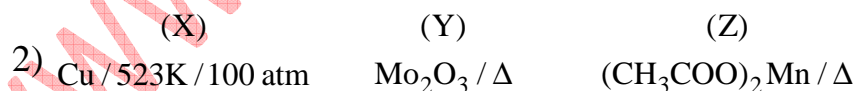
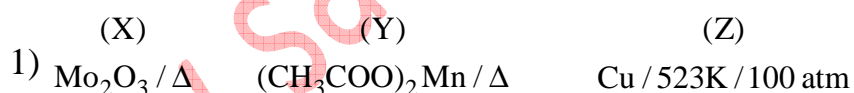
1) 1, 3-butadiene

2) 2, 3-dimethylbutadiene

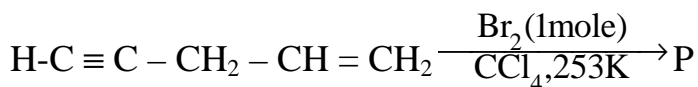
3) 2-methyl-1, 3-butadiene

4) 1, 3-dimethylbutadiene

140) Identify the correct catalyst and reaction conditions for the controlled oxidation of methane to (i) methanol (X), (ii) methanol (Y) and ethane to (iii) ethanoic acid (Z)



141) The major product (P) formed in the below reaction is



- 1) $\text{H-C} \equiv \text{C} - \text{CH}_2 - \text{CH}(\text{Br}) - \text{CH}_2(\text{Br})$
- 2) $\text{CH}(\text{Br})_2 - \text{C}(\text{Br})_2 - \text{CH}_2 - \text{CH} = \text{CH}_2$
- 3) $\text{CH}_2(\text{Br}) - \text{CH}(\text{Br}) - \text{CH}_2 - \text{CH} = \text{CH}_2$
- 4) $\text{CH}_2 = \text{CH}(\text{Br}) - \text{CH}(\text{Br}) - \text{CH} = \text{CH}_2$

142) Match the following

List-I

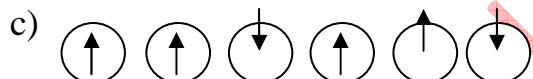
List-II



i) Ferromagnetism



ii) Antiferromagnetism



iii) Ferrimagnetism

1) a-i, b-iii, c-ii

2) a-iii, b-i, c-ii

3) a-ii, b-i, c-iii

4) a-i, b-ii, c-iii

143) How many grams of glucose must be added to 0.5 liter of a solution so that its osmotic

- 1) 1.15 2) 9.22 3) 2.31 4) 4.60

144) Molarity of a 50 mL H_2SO_4 solution is 10.0 M. If the density of the solution is 1.4 gm/cc, calculate its molality

1) 7.14

2) 8.00

3) 10.0

4) None

145) Limiting molar conductivity of Mg^{2+} and Cl^- ions in water is 106.0 and 76.3 $\text{S cm}^2 \text{mol}^{-1}$. The limiting molar conductivity of magnesium chloride (in $\text{S cm}^2 \text{mol}^{-1}$) in water is

1) 182.3

2) 258.6

3) 288.3

4) 364.6

146) A particular reaction has a rate constant $1.15 \times 10^{-3} \text{ s}^{-1}$. How long does it take for 6 g of the reactant to reduce to 3 g? ($\log 2 = 0.301$)

1) 301 s

2) 603 s

3) 840 s

4) 15 s

147) If the value of $\frac{1}{n}$ is equal to 1 in Freundlich adsorption isotherm, then $\frac{x}{m} =$ (x = mass of adsorbate, m = mass of the absorbent, P = pressure of the gas)

1) $\frac{k}{P}$

2) kP

3) k

4) 0

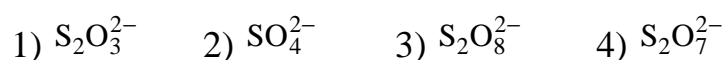
148) What is the slag formed during the extraction of iron?



149) What is the chemical formula of hypophosphorous acid?



150) Which of the following ions possesses S-O-S bond?



151) Which of the elements possess only one electron in 5d orbital?

1) ${}^{69}\text{Tm}$, ${}^{61}\text{Pm}$

2) ${}^{59}\text{Pr}$, ${}^{71}\text{Lu}$

3) ${}^{57}\text{La}$, ${}^{61}\text{Pm}$

4) ${}^{57}\text{La}$, ${}^{71}\text{Lu}$

152) The electronic configuration of Cr in $\text{Cr}(\text{CO})_6$ as calculated using Crystal Field Theory is

1) $t_{2g}^4 e_g^0$

2) $t_{2g}^3 e_g^1$

3) $t_{2g}^6 e_g^0$

4) $t_{2g}^4 e_g^2$

153) Match the following

List-I

a) Natural rubber

b) Cellulose

c) Nylon-6

d) Teflon

List-II

i) β -Glucose

ii) Isoprene

iii) Tetrafluoroethylene

iv) Caprolactam

v) Hexamethylenediamine, adipic acid

1)a-ii, b-i, c-iv, d-iii

2)a-ii, b-iv, c-i, d-iii

3)a-iv, b-i, c-ii, d-iii

4)a-ii, b-iii, c-iv, d-v

154)Identify the non-reducing sugar form the following

1)Maltose 2)Sucrose 3)Lactose 4)Glucose

155)Identify the correct set of functional groups present in Aspartame, an artificial sweetener

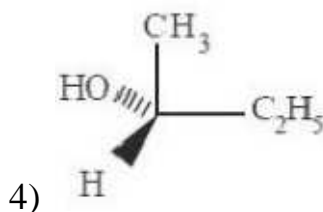
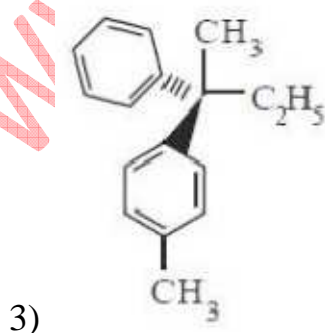
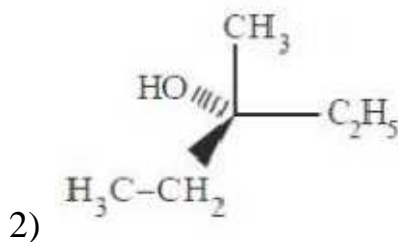
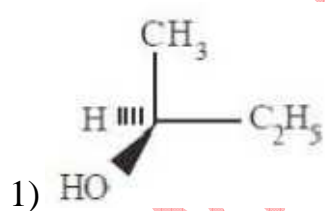
1) $-\text{COOCH}_3$, $-\text{NH}_2$ $\begin{matrix} \text{O} \\ \parallel \\ -\text{C}-\text{NH}- \end{matrix}$, $\begin{matrix} \text{O} \\ \parallel \\ -\text{C}-\text{OC}_2\text{H}_5 \end{matrix}$

2) $-\text{COOCH}$, $-\text{NH}_2$ $\begin{matrix} \text{O} \\ \parallel \\ -\text{C}-\text{NH}- \end{matrix}$, $\begin{matrix} \text{O} \\ \parallel \\ -\text{C}-\text{OCH}_3 \end{matrix}$

3) $-\text{COOCH}_2$, $-\text{NH}-$, $-\text{CO}-$, $-\text{COOH}$

4) $-\text{CHO}$, $-\text{CN}$, $-\text{CH}$, $-\text{COOCH}_3$

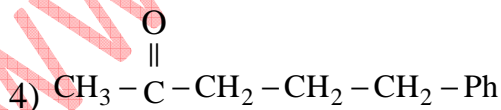
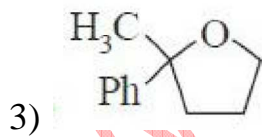
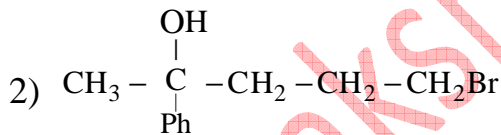
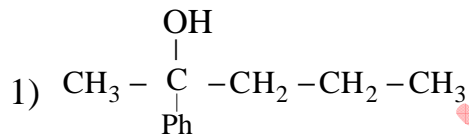
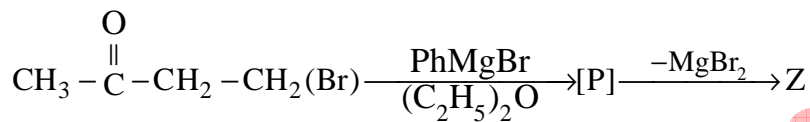
156)Which of the following molecules is not chiral?



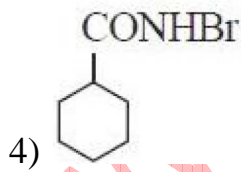
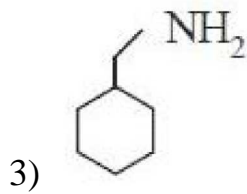
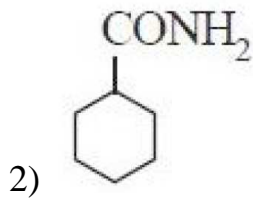
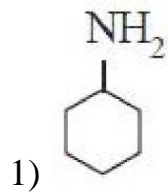
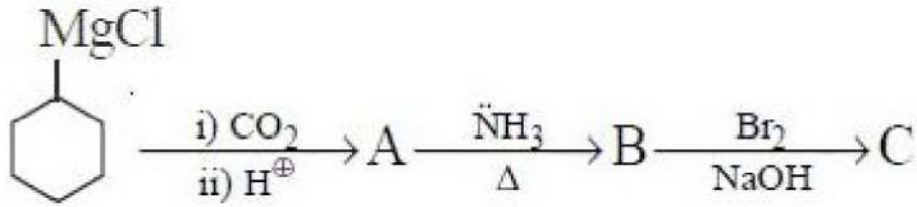
157) The major product obtained in the reaction of bromobenzene with Mg dry ether followed by the reaction with benzonitrile and hydrolysis is

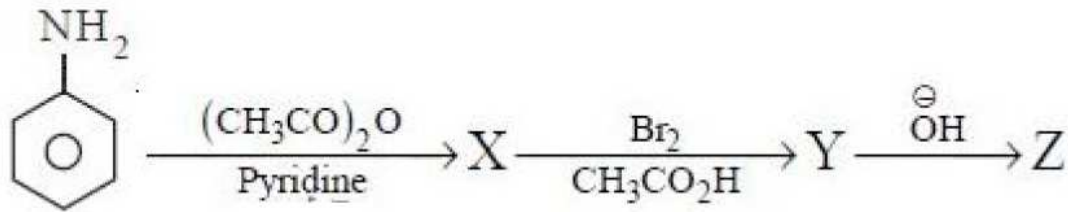
- 1) Acetophenone
- 2) Benzophenone
- 3) Phenyl benzoate
- 4) Benzoic acid

158) The major product (Z) of the following chemical reaction is



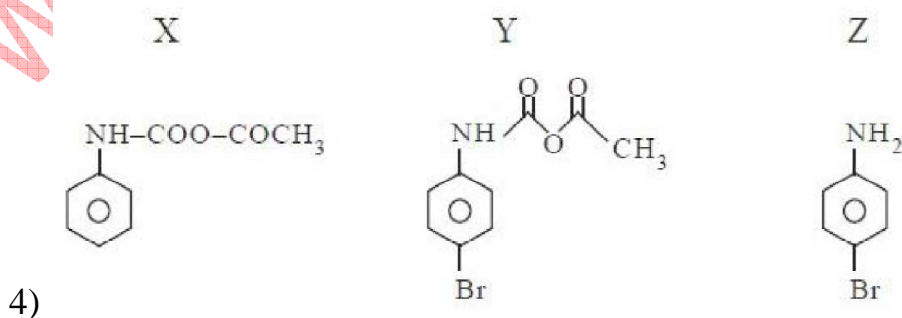
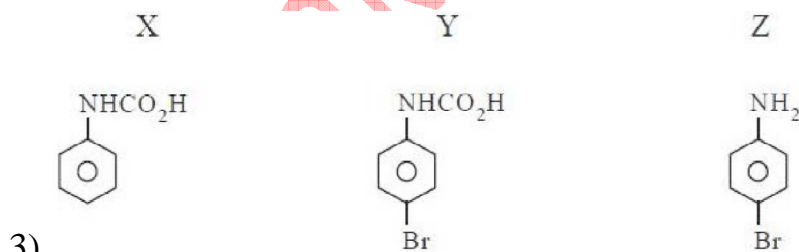
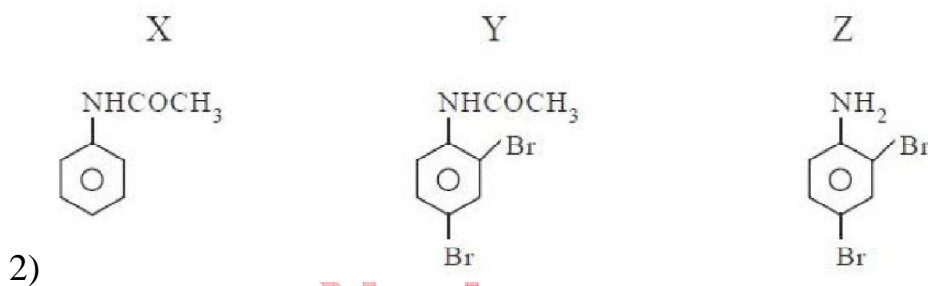
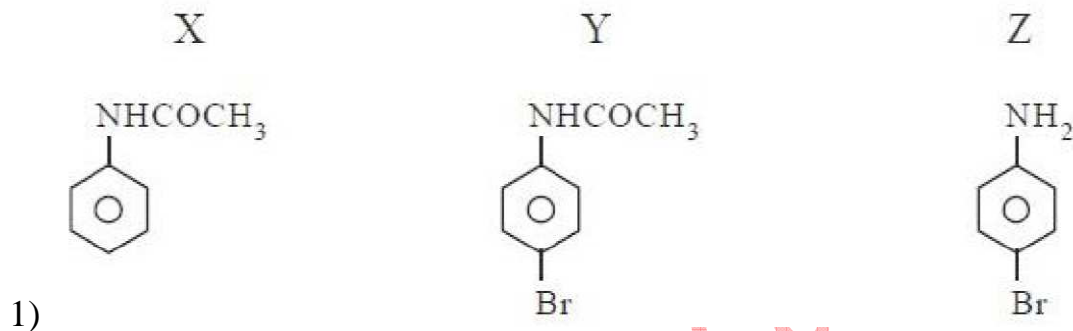
159) In the below given synthetic sequence, the product "C" is





160)

What are structures of X, Y and Z in the above given reaction sequence?



TS EAMCET 2018 Engineering Stream Final Key Date: 05-05-2018 FN (Shift 1)	
121	1
122	3
123	3
124	4
125	3
126	4
127	4
128	2
129	1
130	3
131	1
132	2
133	4
134	1
135	1
136	4
137	2
138	1
139	3
140	2
141	1
142	3
143	4
144	D
145	2
146	2
147	2
148	3
149	2
150	4
151	4
152	3
153	1
154	2
155	2
156	2
157	2
158	3
159	1
160	1