



CHEMISTRY

BOOKS - TS EAMCET PREVIOUS YEAR PAPERS

AP EAMCET SOLVED PAPER 2018 (23-04-2019,SHIFT -1)

Chemistry

1. The ratio of the de-Broglie wavelengths of two particles having mass ratio 1 : 3 and kinetic energy ratio 2 : 1 is

A. 3 : 2

B. $\sqrt{3} : \sqrt{2}$

C. $\sqrt{2} : \sqrt{3}$

D. 2 : 3

Answer: B

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2. 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

A. $\sqrt{\frac{h}{4\pi m}}$

B. $\sqrt{\frac{h}{4\pi}} \times \frac{1}{m}$

C. $\frac{h}{4\pi} \times \sqrt{\frac{1}{m}}$

D. $\sqrt{\frac{h}{2\pi m}}$

Answer: B

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3. In lanthanides, with increase in atomic number atomic radius decreases, except for the element X. what is X ?

A. Gd

B. Eu

C. Tm

D. Dy

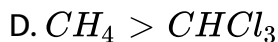
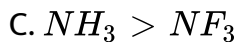
Answer: B

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4. Dipole moment order of which of the following pairs of molecules is not correct ?

A. $HF > HCl$

B. $H_2S > CO_2$

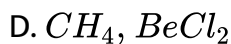
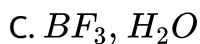
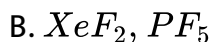
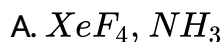


Answer: D

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

X and Y are



Answer: B



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6. 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 54g mol^{-1} . The molar mass of X in g mol^{-1} is

A. 16

B. 2

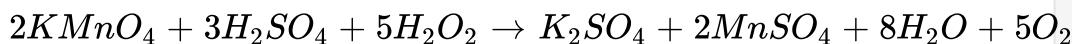
C. 32

D. 28

Answer: B

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7. From the given reaction



Find the normality of H_2O_2 solution, if 20 mL of it is required to react completely with 16 mL of 0.02M $KMnO_4$ solution (Molar mass of $KMnO_4 = 158\text{gmol}^{-1}$)

A. $4 \times 10^{-2}N$

B. $2 \times 10^{-2}N$

C. $6 \times 10^{-2}N$

D. $8 \times 10^{-2}N$

Answer: D

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8. At the temperature $T(K)$ for the reaction



Gibbs energy change for the reaction is (Assume X_2O_4, XO_2 are ideal gases) $\Delta U = xkJmol^{-1}, \Delta S = yJK^{-1}mol^{-1}$

A. $1000x + 2R(T - y)Jmol^{-1}$

B. $1000x + T(2R - y)Jmol^{-1}$

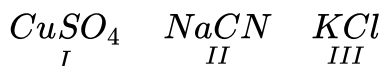
C. $x + T(2R - y)Jmol^{-1}$

D. $x + 2R(T - y)Jmol^{-1}$

Answer: B

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9. Arrange the aqueous solution of the following salts in the increasing order of pH



A. $I < II < III$

B. $I < III < II$

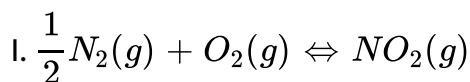
C. $III < II < I$

D. $II < III < I$

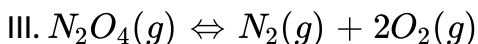
Answer: B

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



(II) $2NO_2(g) \rightleftharpoons N_2O_4(g)$ Using the above reactions the equilibrium constant Z for the reaction (III) given below is



A. $Z = XY$

B. $Z = \frac{Y^2}{X}$

C. $Z = \frac{1}{XY^2}$

D. $Z = \frac{1}{X^2Y}$

Answer: D

11. Match the following

List I	List II
(A) Electron deficient hydride	(I) CH_4
(B) Electron precise hydride	(II) B_2H_6
(C) Electron rich hydride	(III) CaH_2
(D) Saline hydride	(IV) $\text{NiH}_{0.6}$
	(V) PH_3

The correct answer is

- A. $A \quad B \quad C \quad D$
 $III \quad IV \quad II \quad V$
- B. $A \quad B \quad C \quad D$
 $II \quad I \quad III \quad IV$
- C. $A \quad B \quad C \quad D$
 $V \quad II \quad III \quad IV$
- D. $A \quad B \quad C \quad D$
 $II \quad I \quad V \quad III$

Answer: D

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

- A. both form basic oxides and hydroxides
- B. Ions of both have strong tendency to form complexes
- C. in vapour phase chlorides of both have Cl^- bridged chloride structure
- D. Chlorides of both are soluble in organic solvents

Answer: A

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13. In the structure of B_2H_6 , the number of BH_2 groups present in one plane, and the number of $B - H$ bonds, B-B bonds, B-H-B bridge bonds are respectively

A. 2, 0, 3, 2

B. 3, 2, 2, 2

C. 2, 4, 0, 2

D. 2, 4, 2, 0

Answer: C

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14. Identify the incorrect statements from the following.

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

II. Silicon exists as both $[SiF_6]^{2-}$ and $[SiCl_6]^{2-}$ forms.

III. The hybridisation of carbon in fullerence is sp^3

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

A. I, IV

B. II, IV

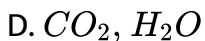
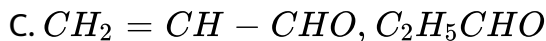
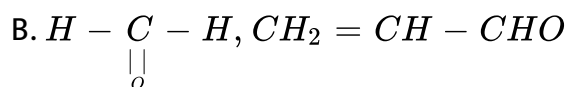
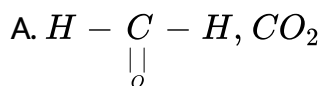
C. II, III

D. III, IV

Answer: C

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15. Methane of the polluted air reacts with ozone and forms the compounds.



Answer: D

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16. 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.

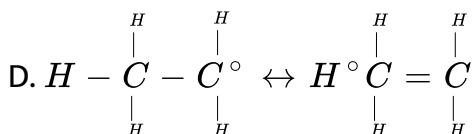
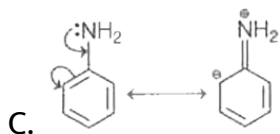
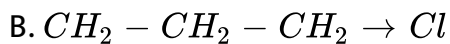
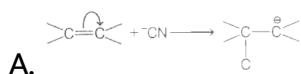
The correct answer is

- A. (A) and (R) are correct, (R) is the correct explanation of (A)
- B. (A) and (R) are correct but (R) is not the correct explanation of (A)
- C. (A) is correct but (R) is not correct
- D. (A) is not correct but (R) is correct.

Answer: C

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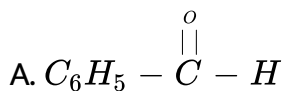
17. Which of the following represents the hyperconjugation effect ?

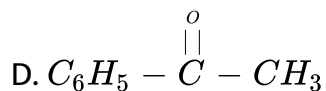
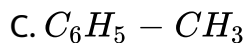
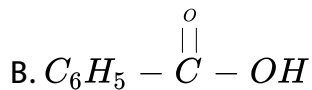


Answer: D

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18. Hexane $\xrightarrow[10-20\text{atm}]{773\text{K}} \text{Cr}_2\text{O}_3$ X $\xrightarrow[\text{Anhydrous AlCl}_3]{\text{CH}_3\text{COCl}}$ Y Y in the above sequence of reaction is





Answer: D

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

A. 1.5 : 1.0

B. 1.0 : 1.5

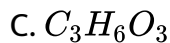
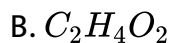
C. 1.26 : 1

D. 1 : 1.26

Answer: C

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



Answer: B

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21. 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 40 mm Hg respectively. What is the mole fraction of toluene in vapour phase when 117 g of benzene is mixed with 46g of toluene? (molar mass of benzene and toluene are 78 and 92g mol^{-1} respectively).

A. 0.78

B. 0.21

C. 0.64

D. 0.35

Answer: B



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22. The rate equation for a first order reaction is given by $[R] = [R]_0 e^{-kt}$. A straight line with positive slope is obtained by plotting $[R]_0$ = initial concentration of reactant, $[R]$ = concentration of reactant at time, t

A. $\log \frac{[R]_0}{[R]}$

B. $[R]$ vs time

C. $\log [R]$ vs time

D. $\log \frac{[R]}{[R]_0}$ vs time

Answer: A

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23. For the oxidation of 0.2 M $FeSO_4$ solution 0.965 amperes current is passed through it for 1 hour. The volume of the solution that is oxidised in mL is

A. 70

B. 80

C. 60

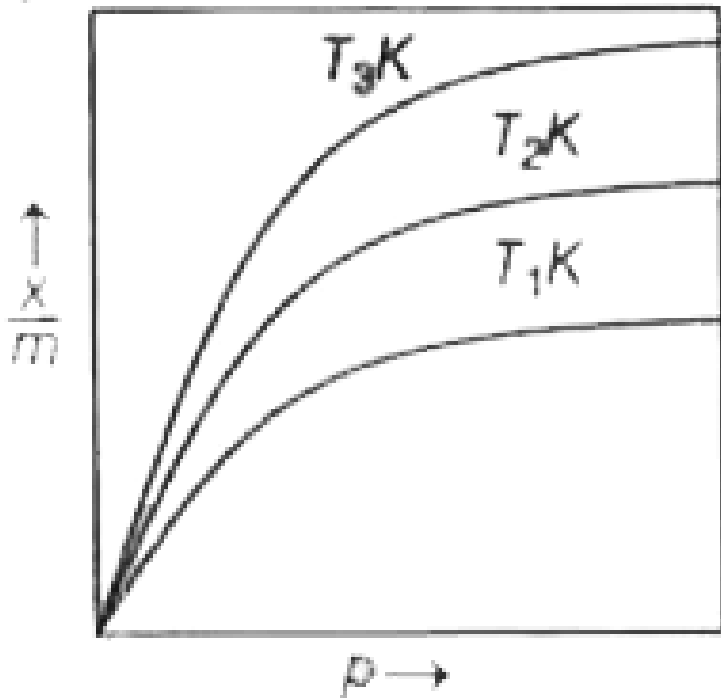
D. 90

Answer: D

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24. Freundlich adsorption isotherms for the physical adsorption of a gas at temperature T_1 , T_2 and T_3 are shown in the graph given

below. The correct relationship between T_1 , T_2 and T_3 is



- A. $T_1 < T_2 < T_3$
- B. $T_3 < T_1 < T_2$
- C. $T_3 < T_2 < T_1$
- D. $T_2 < T_1 < T_3$

Answer: C



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25. The ore which is concentrated by leaching

A. PbS

B. $Al_2O_3 \cdot 2H_2O$

C. SnO_2

D. Fe_2O_3

Answer: B

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

A. C

B. S

C. Cu

D. Zn

Answer: A

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

A. XeO_3 , XeF_6

B. XeF_2 , XeF_4

C. XeF_4 , XeO_3

D. XeF_4 , $XeOF_4$

Answer: A

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28. 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 $[PCl_6]^-$ has octahedral and cation $[PCl_4]^+$ has tetrahedral shape.

A. I and II

B. II and IV

C. I and IV

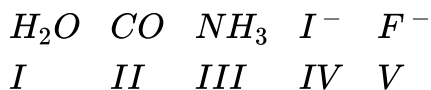
D. I and III

Answer: C



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29. Arrange the following ligands in the order of increasing field strength.



A. $IV < V < I < III < II$

B. $IV < V < III < II < I$

C. $V < IV < III < I < II$

D. $IV < I < V < II < III$

Answer: A

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

A. V

B. Cr

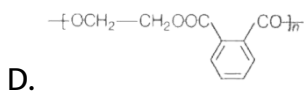
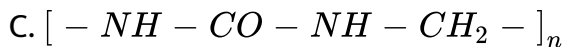
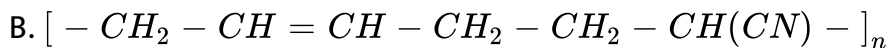
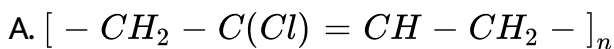
C. Mn

D. Fe

Answer: C

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31. Which one of the following structures represents the neoprene rubber?



Answer: A

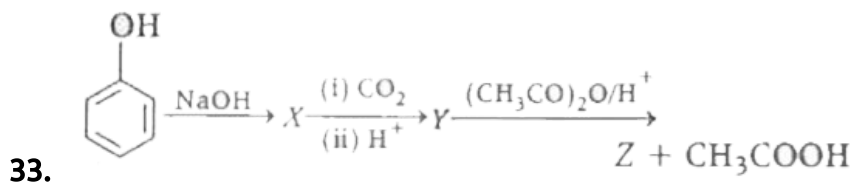
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32. The type of bond connecting two nucleotides is

- A. peptide bond
- B. hydrogen bond
- C. phosphodiester bond
- D. glycosidic bond

Answer: C

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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.

A. II and III

B. I and IV

C. II and IV

D. I and II

Answer: A

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34. Identify the halogen exchange reaction from the following.

A. Finkelstein reaction

B. Sandmeyer reaction

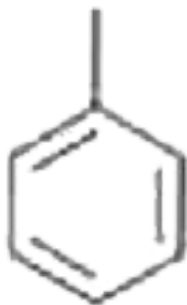
C. Fittig reaction

D. Wurtz-Fitting reaction

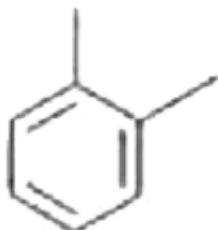
Answer: A

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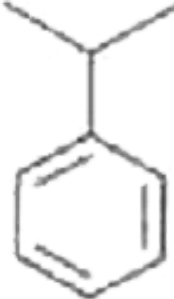
35. Which of the following structures represents cumene?



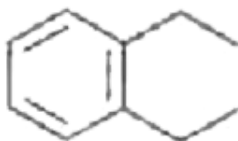
A.



B.



C.



D.

Answer: C

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36. In which of the following reactions, benzaldehyde is formed from benzoyl chloride and hydrogen in the presence of $Pd - BaSO_4$?

- A. Stephen reaction
- B. Etard reaction
- C. Gatterman-Koch reaction

D. Rosenmund reduction reaction.

Answer: D

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37. The reagent used for the conversion of allyl alcohol to propenal is

A. $O_3 / H_2O - Zn$ dust

B. DIBAL -H

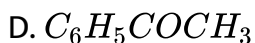
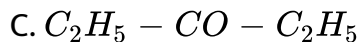
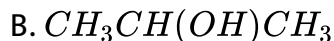
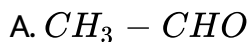
C. CrO_2Cl_2 / H_3O^+

D. $C_5H_5NH^+ CrO_3Cl^-$

Answer: D

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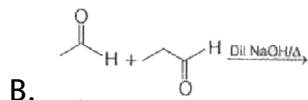
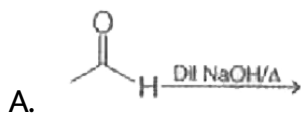
38. The compound which does not respond to iodoform test is

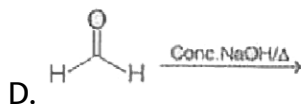
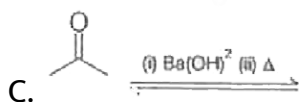


Answer: C

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39. Which of the following reactions does not represent the aldol condensation reaction ?

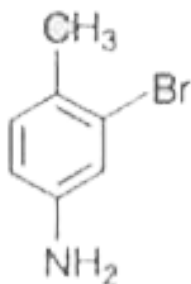
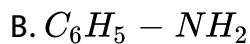
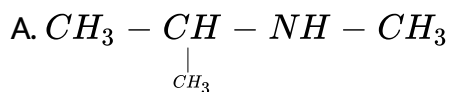


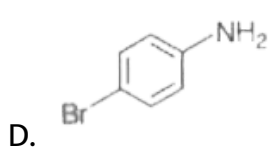


Answer: D

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40. The amine which does not react with chloroform and ethanolic potassium hydroxide is





Answer: A

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