



CHEMISTRY

BOOKS - TS EAMCET PREVIOUS YEAR PAPERS

TS EAMCET 2019 (6 MAY SHIFT 1)

Chemistry

1. The speed of the electron (in ms^{-1}) in the third orbit of hydrogen atom is approximately

(mass of electron = $9.1 \times 10^{-31} \text{ kg}$)

A. 3.6×10^5

B. 2.18×10^6

C. 7.26×10^5

D. 2.18×10^5

Answer: C



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2. The ratio of the radius of second orbit of Li^{2+} to that of third orbit of Be^{3+} is

A. $\frac{9}{8}$

B. $\frac{8}{9}$

C. $\frac{27}{16}$

D. $\frac{16}{27}$

Answer: D



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3. Assertion (A) While going from left to right of the periodic table, the atomic size decreases more rapidly for the 3d-series compared to the 4 f-series of elements. Reason R 3d-electrons experience lesser shielding than 4 f-electrons.

The correct answer is

A. Both (A) and R are correct and R is the correct explanation of (A)

B. Both (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: A



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4. Which one among the following statements is/are not correct?

I. Ba compounds, generally are more covalent than Be compounds.

II. The electron gain enthalpy of He is positive.

The oxidation state of O in OF_2 and Na_2O are same.

IV. The radius of Na^+ ion is smaller than that of F^- ion.

A. I, III, IV

B. II

C. II, III, IV

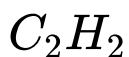
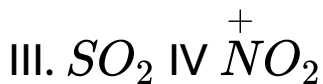
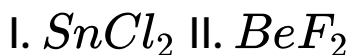
D. I, II

Answer: D



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5. Which of the following have linear structure



A. I, II, IV

B. II, IV V

C. II, III, IV

D. I,IV,V

Answer: B



6. Match the following :

List I (Molecular geometry)		List II (Molecule)
A. Trigonal planar	I.	PCl_5
B. Tetrahedral	II.	SF_6
C. Trigonal bipyramidal	III.	BF_3
D. Octahedral	IV.	CCl_4
	V.	BeCl_2

The correct answer is

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

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

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

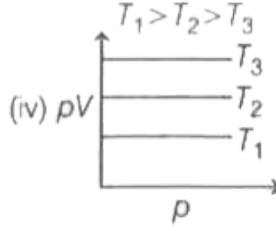
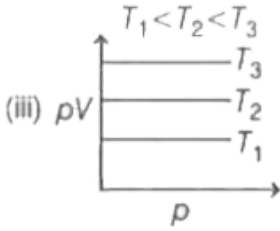
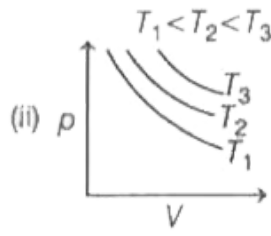
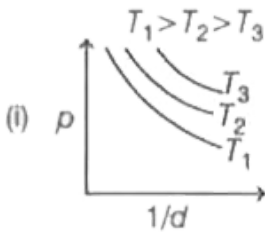
D. $\begin{matrix} A & B & C & D \\ III & IV & I & II \end{matrix}$

Answer: D



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7. Which of the following is/are correct for Boyle's law ?



A. (iv)

B. (ii), (iv)

C. (i), (iv)

D. (ii), (iii)

Answer: D



8. The compressibility factor (Z) of a gas at critical state is

$$\left(T_e = \frac{8a}{27Rb}, p_e = \frac{a}{27b^2}, V_e = 3b \right)$$

A. $\frac{8}{3}$

B. 1

C. $\frac{3}{8}$

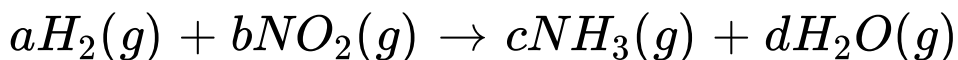
D. 0.5

Answer: C



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9. The number of moles of H_2 which is required to produce 10 moles of NH_3 in the following reaction is



A. 10

B. 20

C. 35

D. 53

Answer: C



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10. Match the following :

List I	List II
A. $\text{TiCl}_4(l) + 2\text{Mg}(s) \xrightarrow{\Delta} \text{Ti}(s) + 2\text{MgCl}_2(s)$	I. Disproportionat -ion reaction
B. $2\text{H}_2\text{O}_2(aq) \longrightarrow 2\text{H}_2\text{O}(l) + \text{O}_2(g)$	II. Metal displacement reaction
C. $\text{C}(s) + \text{O}_2(g) \xrightarrow{\Delta} \text{CO}_2(g)$	III. Decomposition reaction
D. $2\text{NaH}(s) \xrightarrow{\Delta} 2\text{Na}(s) + \text{H}_2(g)$	IV. Combination reaction

The correct answer is

A. $A \quad B \quad C \quad D$
 $II \quad I \quad IV \quad II$

B. $A \quad B \quad C \quad D$
 $I \quad II \quad II \quad IV$

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

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

Answer: A



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11. What is the standard enthalpy of reaction (in kJ) when two moles of $Fe_2O_3(s)$ reacts with H_2 gas to give Fe metal?

ΔH_f° of $Fe_2O_3(s)$ and $H_2O(l)$ are -824.2 and $-285.83 \text{ kJ mol}^{-1}$ respectively.

A. -66.58

B. -33.3

C. -538.37

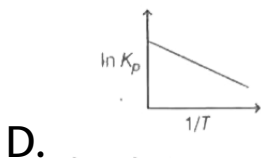
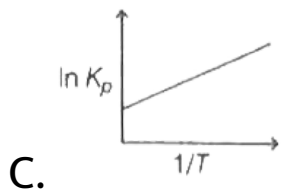
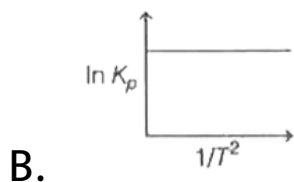
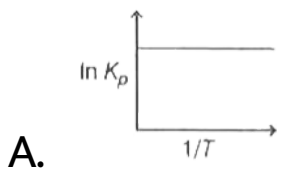
D. -1110.03

Answer: A



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12. In which of the following plots, an endothermic reaction is correctly represented?



Answer: D



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13. What is the order of relative basic strength of ClO_2^- , ClO_3^- , ClO_4^- ?



Answer: A



14. How many water molecules present in $CuSO_4 \cdot 5H_2O$ are hydrogen bonded?

A. 5

B. 1

C. 4

D. 2

Answer: B



15. Which gas/gases evolve (s) when sodium metal is reacted with at room temperature?

A. Oxygen only

B. Hydrogen only

C. Sodium vapour and hydrogen

D. Hydrogen and water vapour

Answer: C



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16. A and B are formed when borax, is dissolved in water. C and B are formed when borax is reacted with aqueous HCl solution. What are A and C respectively?

A. NaCl, NaOH

B. NaOH, NaCl

C. NaBO_2 , NaCl

D. NaOH , NaBO_2

Answer: B



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17. How many nearest neighbours are there for Si and O atoms in quartz crystals?

A. 4(*Si*), 2(*O*)

B. 4(*Si*), 4(*O*)

C. 2(*Si*), 2(*O*)

D. 3(*Si*), 2(*O*)

Answer: A



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18. Match the following :

List I	List II
A. Bleaching of paper	I. CF_2Cl_2
B. Eye irritant	II. H_2O_2
C. Freons	III. Na_2AsO_3
D. Herbicide	IV. PAN
	V. CO_2

The correct answer is

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

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

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

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

Answer: D



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19. Which of the following method is adopted to obtain gasoline from crude oil?

- A. Vacuum distillation
- B. Steam distillation
- C. Adsorption on animal charcoal
- D. Fractional distillation

Answer: D



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20. Which of the following statements is correct in the Kolbe's electrolysis?

A. Hydrocarbons containing even number of carbon atoms produced at anode

B. Hydrocarbons containing odd number of carbon atoms produced at anode

C. Hydrocarbons containing even number of carbon atoms produced at cathode

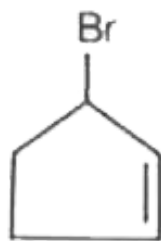
D. Hydrocarbons containing odd number of carbon atoms produced at cathode

Answer: A

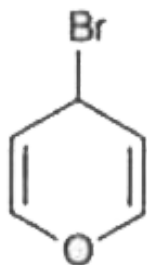


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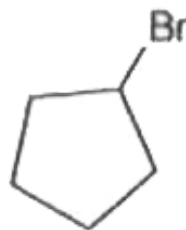
21. The correct order of rates of C-Br bond ionisation of the following bromides is



(i)



(ii)



(iii)

A. $(i) > (ii) > (iii)$

B. $(ii) > (iii) > (i)$

C. $(i) > (iii) > (ii)$

D. $(ii) > (i) > (iii)$

Answer: D



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22. If an element having atomic number 96 crystallises in cubic lattice with a density of 10.3gcm^{-3} and the edge length of 314 pm then, the structure of solid is

A. hcp

B. fcc

C. bcc

D. simple cubic

Answer: D



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23. The vapour pressure of pure CCl_4 (molar mass = 154gmol^{-1}) and $SnCl_4$ (molar mass = 170gmol^{-1}) at $25^\circ C$ are 115.0 and 238.0 torr respectively. Assuming ideal behaviour, calculate the total approximate vapour pressure in torr of a solution containing 10 g of CCl_4 and 15g of $SnCl_4$.

A. 185.85

B. 190.0

C. 180.7

D. 182.1

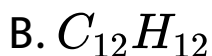
Answer: A



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24. A camphor sample melts at $176^{\circ}C$. K_f for camphor is 40 K kg mol^{-1} . A solution of 0.02 g of a hydrocarbon in 0.8 g of camphor melts at $156.77^{\circ}C$. The hydrocarbon is made up of

92.3% of carbon. What is the molecular formula of the hydrocarbon?



Answer: C



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25. If 'A' is the reactant and 'P' is the product, which one of the following is the correct form of Nernst equation?

A. $\frac{[A]}{[P]} = \exp\left(\frac{RT}{nF}(E - E^\circ)\right)$

B. $\frac{[A]}{[P]} = \exp\left(\frac{nF}{RT}(E - E^\circ)\right)$

C. $\frac{[A]}{[P]} = \exp\left(-\frac{nF}{RT}(E - E^\circ)\right)$

D. $E - E^\circ = \frac{RT}{nF} \ln \frac{[A]}{[P]}$

Answer: B



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26. The first order decomposition of H_2O_2 in an appropriate medium is characterised by a rate constant of 0.2303 min^{-1} . What is the time (in min) required to complete $9/10$ fraction of the reaction?

A. 0.1

B. 10

C. 100

D. 0.01

Answer: B



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27. Which of the following statements is/are not correct?

Adsorption is accompanied by decrease in enthalpy as well as decrease in entropy of the system.

Gases, which can react strongly with adsorbent show chemisorption.

When the value of the slope of the Freundlich isotherm is non-zero, adsorption is

independent of pressure.

Gold number of potato starch is 0.15

A. A,D

B. B,C

C. A,C

D. C,D

Answer: D



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28. Which one of the following is used to produce Al by electrolysis?

A. Molten $Al_2O_3 + Na_3AlF_6$ electrolyte

carbon coated steel vessel cathode,

graphite anode.

B. $Al_2O_3 + PhF_2$ electrolyte, steel

cathode, graphite anode

C. Molten $Al_2O_3 + Na_3AlF_6$ electrolyte,

graphite cathode steel anode

D. $Al_2O_3 + H_2O$ electrolyte graphite

cathode, steel anode

Answer: A



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29. Statement (A) Among the oxides of nitrogen, NO and NO_2 are paramagnetic .

Statement (B) NO is paramagnetic in the gaseous state and diamagnetic in liquid state.

The correct answer is

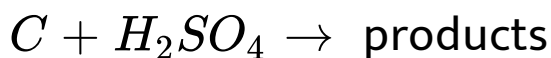
- A. (A) is correct (B) is not correct
- B. Both (A) and (B) are not correct
- C. (A) is not correct, (B) is correct
- D. Both (A) and (B) are correct

Answer: D



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30. The products formed during the reaction of carbon with conc. H_2SO_4 are



A. CO , SO_2 , H_2O

B. CO_2 , SO_2 , H_2O

C. CO , CO_2 , H_2O

D. SO , H_2O

Answer: B



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31. How many protons will be consumed when dichromate ion oxidises Fe^{2+} ions in aqueous acidic medium?

A. 4

B. 6

C. 10

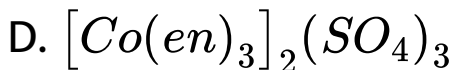
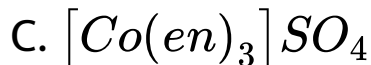
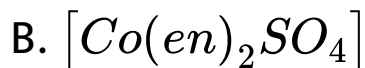
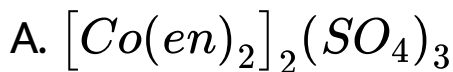
D. 14

Answer: D



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32. Which one of the following is tris (ethane-1, 2-diammine) cobalt (III) sulphate?



Answer: D



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33. Which of the following polymer is formed due to the co-polymerisation of 1, 3-butadiene and phenylethene?

A. Buna-N

B. Neoprene

C. Novalac

D. Buna-S

Answer: D



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34. Find the reagent that oxidises glucose into saccharic acid?

A. Br_2H_2O

B. Hl, Δ

C. HNO_3, H_2O

D. HCN

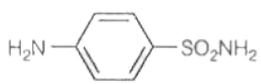
Answer: C



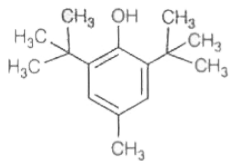
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35. Which one among the following is an antioxidant?

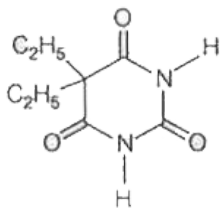
A.



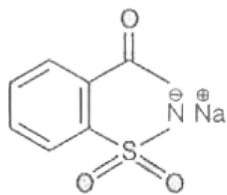
B.



C.



D.

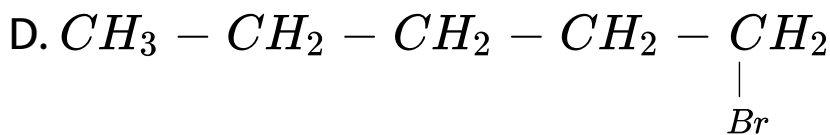
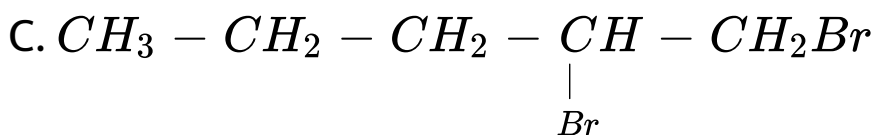
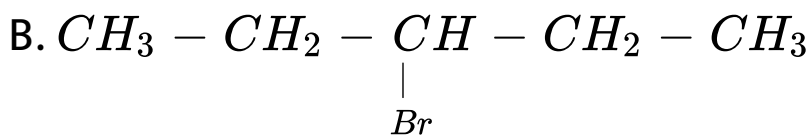
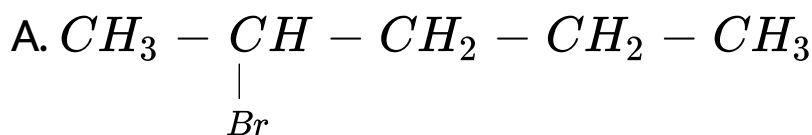


Answer: B



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36. Find the reactants which on heating with alcoholic KOH produces the compound

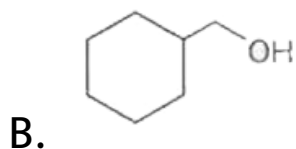
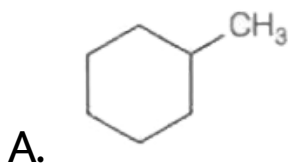
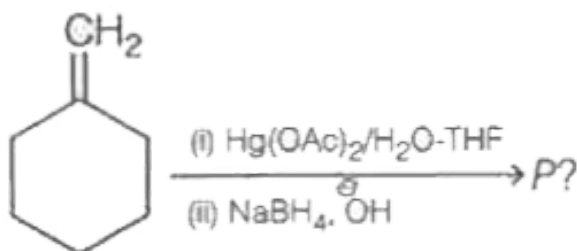


Answer: B

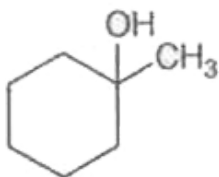


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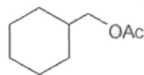
37. The major product (P) formed in the below reaction is



C.



D.

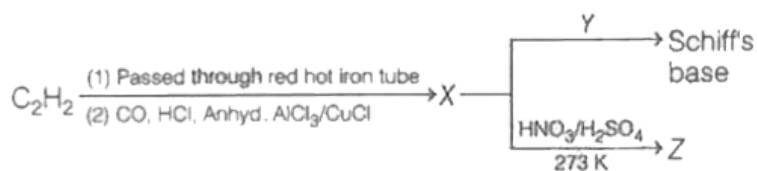


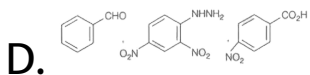
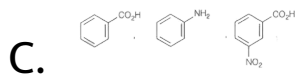
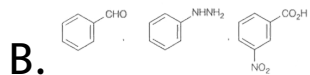
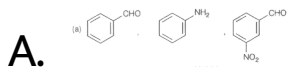
Answer: C



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38. Identify X, Y and Z respectively from the following reactions :



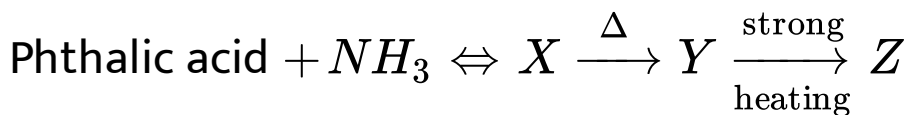


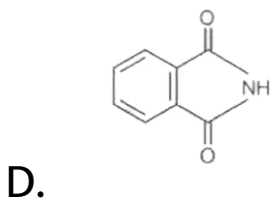
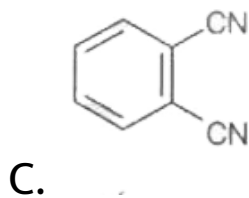
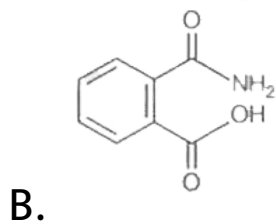
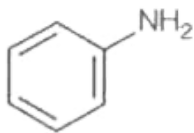
Answer: A



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39. Identify the structure of Z in the following reaction sequence



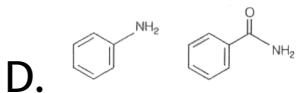
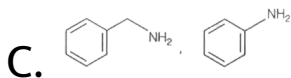
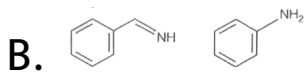
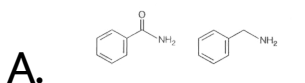
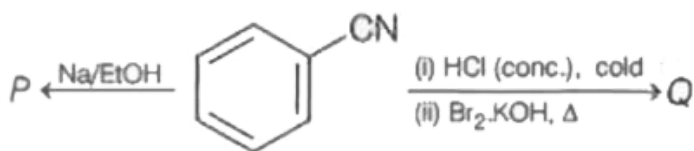


Answer: D



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40. The major products P and Q formed in the following reactions of benzonitrile are



Answer: C



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