CHEMISTRY

BOOKS - TS EAMCET PREVIOUS YEAR PAPERS

TS EAMCET 2019 (4 MAY SHIFT 2)

Chemistry

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1. In the Millikan's oil drop method, which of the following force does not act on the oil drop?

    A. Gravitational force

    B. Viscous force

    C. Magnetic force

    D. Electrostatic force

Answer: C

2. Which of the following series correctly represents the energy of the radiation ?

A. Radio waves gt X-rays gt visiblegt IR

B. UV gt X-rays gt IR gt radio waves

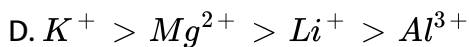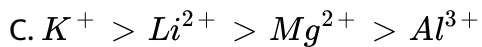C. y-rays gt IA gt visible gt microwave

D. X-rays gt UV gt IR gt microwave

Answer: D

3. Identify the correct order of innic radii of the following ions

A. $Al^{3+} > K^+ > Mg^{2+} > Li^+$

B. $K^+ > Mg^{2+} > Al^{3+} > Li^+$

C. $K^+ > Li^{2+} > Mg^{2+} > Al^{3+}$

D. $K^+ > Mg^{2+} > Li^+ > Al^{3+}$

Answer: C

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4. The elements with higheset and lowest electron gain enthaly in group 16 resiectively are
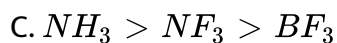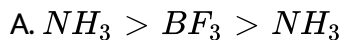
   A. O, Te

   B. O: Po

   C. S , O

   D. S, Te

Answer: C

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5. Which is the correct order of dipole moments of BF_3, NF_3 and NH_3?

A. $NH_3 > BF_3 > NH_3$

B. $BF_3 > NF_3 > NH_3$

C. $NH_3 > NF_3 > BF_3$

D. $NF_3 > NH_3 > BF_3$

Answer: C

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6. Match the following :

List I (Molecules/ions)			List II (Bond order)	
A.	N_2^+	I.		1.0
B.	CO	II.		1.5
C.	O_2	III.		2.0
D.	O_2^-	IV.		2.5
		V.		3

The correct answer is

A. $A \rightarrow IV, B \rightarrow V, C \rightarrow III, D \rightarrow II$

B. $A \rightarrow III, B \rightarrow IV, C \rightarrow V, D \rightarrow II$

C. $A \rightarrow IV, B \rightarrow II, C \rightarrow III, D \rightarrow I$

D. $A \rightarrow V, B \rightarrow IV, C \rightarrow II, D \rightarrow III$

Answer: A

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7. The van der Waals equatin for 0.5 mol of a gas is

A. $\left(p + \dfrac{a}{4V^2}\right)\left(\dfrac{V - b}{2}\right) = HI$

B. $\left(p + \dfrac{a}{4V^2}\right)(2V - b) = RT$

C. $\left(p + \dfrac{a}{4V^2}\right)(2V - 4b) = RT$

D. $\left(p + \dfrac{a}{4V^2}\right) = \dfrac{2RT}{2(V - b)}$

Answer: B

8. Which one of the following represents Boyle's temperature of a gas?

A. The temperature at which an ideal gas obeys Boyle's law

B. The temperature at which the compressibility factor is less than 1 for a real gas

C. The temperature at which a gas obeys ideal gas how over an appreciable range of pressure

D. The temperature at which the compressibility factor deviates from 1 for an ideal gas.

Answer: C

9. The approximate molarity of a solution in mol L^{-1} that contains 13.50 g of naCl dissolved in 452 mL of water is

A. 0.25

B. 0.51

C. 1

D. 1.2

Answer: B

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10. The coefficients X,y,p,q and r in the following balanced equations respectively are :

$$xMnO_{4(aq)}^{2-} + yH_2O_{(l)} \rightarrow pMnO_{2(s)} + qMnO_{4(aq)}^- + rOH_{(aq)}^-$$
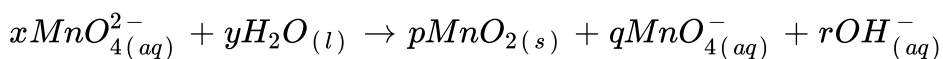
A. 3, 2, 2, 4,1

B. 2,3,1,1,5

C. 2, 3, 2, 1,5

D. , 2, 1,2, 4

Answer: D

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11. The increase in entropy in JK^{-1} of a substance when it absorbs 1 kJ of hear energy at 3 K is

A. 3.33

B. 333.3

C. 0.333

D. 0.0333

Answer: B

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12. Consider the equilibrium $H_2 + I_2 \rightleftharpoons 2HI$. Calculate the equilibrium constant of the reverse reaction when the equlibrium concentration of H_2, I_2 and HI are $1.14 \times 10^{-2}, 0.12 \times 10^{-2}$ and $2.50 \times 10^{-2} mol L^{-1}$, respectively

A. 46.4

B. 0.021

C. 18.42

D. 0.054

Answer: B

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13. The concentration in M of OH^- in 0.001 M H_2SO_4 is

A. 1×10^{-13}

B. 0.5×10^{-12}

C. 5×10^{-12}

D. 0.5×10^{-13}

Answer: C

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14. Which one of the following gives highest volume of O_2 at STP on complete decompositon ?

A. 2 mL of 100 V H_2O_2

B. 500 mL of 30 V H_2O_2

C. 1 L of 10 V H_2O_2

D. 100 mL of 20 V H_2O_2

Answer: B

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15. The frequency of the radiation emitted by alkali metals in the flame test follows the other

A. Li gt Na gt K gtCS

B. Ligt K gt Na gt CS

C. K gt Na gt Li gt Cs

D. K gt Cs gt Na gt Li

Answer: D

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16. Which one of the following is correct relating to diborane (B_2H_6) ?

A. Colourless liquid

B. Colourless solid

C. Colourless gas

D. Colourless gel

Answer: C

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17. Identify the correct statement (s) from the following:

(i) The catentiaon property of group 14 elements decreases from carbon to tin.

(ii) Fullerence (C_{60}) has 20 five-membered carbon rings and 12 six-membered carbon rings.

(iii) SiO_2 is soluble in Conc.NaOH.

    A. Only II

    B. I. III

    C. I,II

    D. II, III

Answer: B

18. Consider the following reactins involving some atmospheric pollutants.

$$NO + O_3 \rightarrow NO_2 + O_2 \xrightarrow{hv} NO + O_3$$

$$4NO_2 + O_2 + 2H_2O \rightarrow 4HNO_3$$

$$3CH_4 + 2O_3 \rightarrow 3H_2C = O + 3H_2O$$
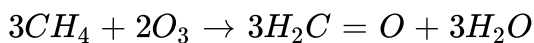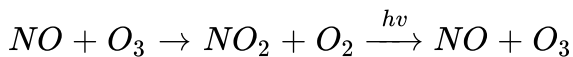
Based on the above, the formation of formaldehyde from methane in the atmosphere will be controlled by,

A. Only O_3

B. O_3 and : NO_2

C. O_3, NO and NO_2

D. NO and NO_2

Answer: C

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19. The number of no bond resonance structures possible for but-1-ene and a $3°$ carbocation having methyl, ethyl and isobutyl groups on cationic carbon respectively are

A. 3, 7

B. 4, 6

C. 2, 7

D. 5, 6

Answer: C

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20. Total number of acyclic and cyclic isomers possible for molecular formula C_4H_6 is

A. 5

B. 7
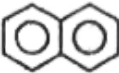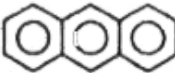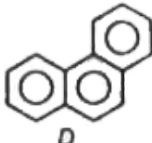
C. 9

D. 8

Answer: C

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21. The order of stability of aromatic hydrocarbons given below is

Structure	A	B	C	D
Resonance stabilisation energy in kcal/mol	36	61	84	92

A. A lt D lt B lt C

B. D lt Alt B lt C

C. B ltCltDltA

D. Alt D lt B lt C

Answer: D

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22. In a compound AB, A atoms occupy the corners of the cube and the cube and the B atoms occupy the body centre of the cube. If the A atoms posses magnetic moment due to up-spin and B atoms possess magnetic moment due to down spin, the magnetic nature of the compound AB in an isolated unit cell is

    A. paramagnetic

    B. ferrimagnetic

    C. diamagnetic

    D. anti-ferromagnetic

Answer: D

23. Two compounds form an ideal solution at room temperature. Which of the following are correct for this ideal solution?

(A) $\Delta G = (+ve)$

(B) $\Delta S = (+ve)$ surrounding

(C) $\Delta S = (+ve)$ system

(D) $\Delta_{max} H = 0$

    A. C,D

    B. B,C,D

    C. B,C

    D. A,D

Answer: A

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24. If a solute associates in a solvent, its experimentally calculated molar mass using boiling point elevation method will be

A. half of the actual value

B. will remain same as actual value

C. one fourth of the actual value

D. higher than the actual value

Answer: D

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25. For a hald cell containing a Pt rod immersed in a solution of $1MHA, O_2(g)$ is bubbled at 1 atm. The stnadard reduction potential for water formation is 1.23 V. Given a dissociation constant, $Ka = 1 \times 10^{-4}$ for HA, what is $E_{\text{half cell}} at 298K$ in V?

A. 1.289

B. 1.171

C. 1.348

D. 1.112

Answer: C

26. When the temperature of a reaction is raised by $10°C$, how many times the rate will be enhanced?

A. 1.5

B. 3

C. 2

D. 4

Answer: C

27. The most effective coagulating agent among the following for Sb_2S_3 sol is

A. Na_2SO_4

B. $Al_2(SO_4)_3$

C. NH_4Cl

D. $NaCl$
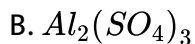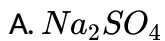
Answer: B

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28. Which of the following statements are correct related to metallurgy?

(A) In electrolytic refining of copper, pure Cu is used as anode.

(B) Zone refining is based on the principle that impurities are more soluble in the melt than in the solid state of the metal.

(C) (C) TiI_4 upon heating will give pure Ti.

(D) Very pure Zr may be obtained by galvanisation

(E) In copper smelting, hot air is used to convert to $CuSO_4$

The correct answer is

A. (A), (B), (E)

B. (B), (C)

C. (B), (C), (D), (E)

D. (B), (C), (D)

Answer: B

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29. Identify all the products formed when XeF_4 is completely hydrolysed.

A. Xe, XeO_3, O_2, HF

B. Xe, O_2, HF

C. XeO_3, O_2

D. XeO_3

Answer: A

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30. What are the compounds formed when white Phosphorous is dissolved in boiling NaOH solution in an inert atmosphere ?

A. PH_3, $NaPO_4$

B. NaH_2PO_4, $P(OH)_3$

C. PH_3, NaH_2PO_2

D. P_4O_{10}, Na

Answer: C

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31. Match the following :

Metal ion			Colour
A.	V^{4+}	I.	Colourless
B.	Ti^{3+}	II.	Purple
C.	Ti^{4+}	III.	Green
D.	Ni^{2+}	IV.	Blue
		V.	Yellow

The correct answer is

A. $A \rightarrow IVB \rightarrow II, C \rightarrow I, D \rightarrow III$

B. $A \rightarrow II, B \rightarrow V, C \rightarrow I, D \rightarrow III$

C. $A \rightarrow III, B \rightarrow II, C \rightarrow I, D \rightarrow V$

D. $A \rightarrow IV, B \rightarrow V, C \rightarrow I, D \rightarrow III$
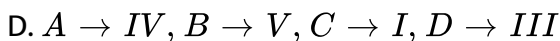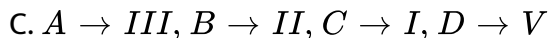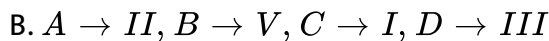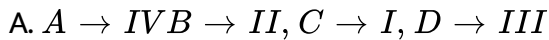
Answer:

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32. The correct order of the increasing magnetic moments for the following ions is

$NiCl_4^{2-}, Fe(H_2O)_6^{2+}, Ni(CN)_4^{2-}, Cu(H_2O)_6^{2+}$

A. $Ni(CN)_4^{2-} < Cu(H_2O)_6^{2+} < NiCl_4^{2-} < Fe(H_2O)_6^{2+}$

B. $NiCl_4^{2-} < NiCl_4^{2-} < Fe(H_2O)_6^{2+} < Cu(H_2O)_6^{2+}$

C. $Ni(CN)_4^{2-} < NiCl_4^{2-} < Cu(H_2O)_6^{2+} < Fe(H_2O)_6^{2+}$

D. $Ni(CN)_4^{2-} < Cu(H_2O)_6^{2+} < Fe(H_2O)_6^{2+} < NiCl_4^{2-}$
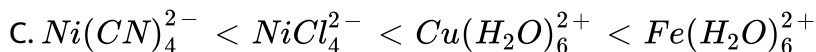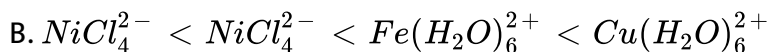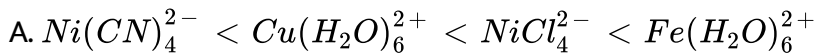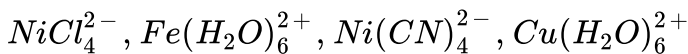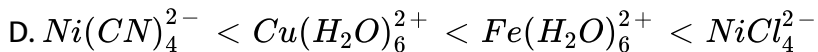
Answer:

33. The monomer units of Nylon 6,6 Nylon 2-Nylon 6 are respectively,

A.

$$H_2NCH_2CO_2H, H_2N - (CH_2)_6 - NH_2, HO_2C - (CH_2)_4 - CO_2H$$

B.

$$H_2NCH_2CO_2H, HO_2C - (CH_2)_4 - CO_2H, H_2N(CH_2)_6, NH_2, H_2-$$

C.

$$H_2N(CH_2)_6NH_2, HO_2C - (CH_2)_4 - CO_2HH_2NCH_2Co_2H, H_2N($$

D. $H_2NCH_2CO_2H, H_2N - (CH_2)_4 - CO_2H$
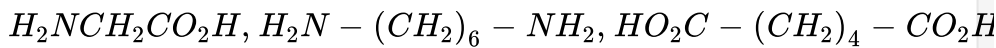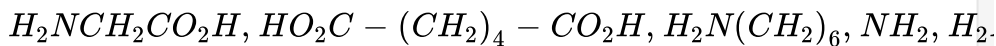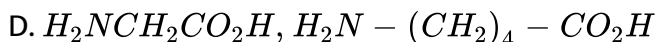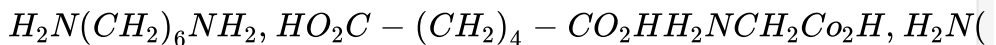
Answer:

34. The product (s) formed when glucose rreacts with a strong oxidising agent like HNO_3 is/are

    A. $COOH(CHOH)_4COOH$

    B. CO_2, H_2O

    C. $COOH(CHOH)_4CHO$

    D. CO, CO_2, H_2O
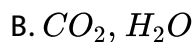
Answer:

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35. Which of the following statements are true foe saccharin.

(A) It is a sodium salt and is not soluble in water.

(B) It is much sweeter than cane suger.

(C) It is great value for diabetic patients and is excerted as such in urine.

(D) It is harmful

A. A, B

B. B, C

C. C, D

D. B, D

Answer:

36. The final product "B" of the below reaction sequence is

$$CH_3 - \overset{\overset{\displaystyle Br}{|}}{CH} - CH_3 \xrightarrow{KOH / C_2H_3OH} A \xrightarrow[HBr]{(C_6H_5CO)_2O_2} B$$
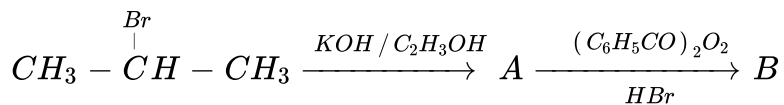
A. $CH_3CH_2CH_2OH$

B. $CH_3CH = CH_2$

C. $CH_3CH_2CH_2Br$

D. $(CH_3CH_2CH_2)_2O$

Answer:

37. Arrange the following compounds in the correct order of their acid strength

H_2O , (A)　　(B)　　CH_3⟩$CHOH$ (C)　　CH_3 OH (D)
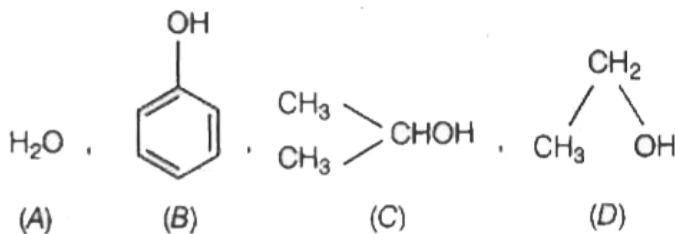
A. A gt D gt C gt B

B. A gt B gt C gt D

C. B gt C gt D gt A

D. B gt A gt D gt C

Answer:

38. The prouduct (P) of below reactin sequence is

$$CH_3CH_2CHO \xrightarrow[(ii)\,\Delta H^{\oplus}]{(i)\,NaOH} P$$

$$(iii)\,H_2\,/\,Ni,\,573K$$

A. $CH_3Ch_2CH = \overset{\overset{\displaystyle CH_3}{|}}{C} - CH_3$

B. $CH_3CH_2CH_2 \overset{\overset{\displaystyle CH_3}{|}}{C} H - CH_2OH$

C. $CH_3CH_2CH = \overset{\overset{\displaystyle CH_3}{|}}{C} - CHO$

D. $CH_3CH_2CH = \overset{\overset{\displaystyle CH_3}{|}}{-} CO_2H$

Answer:

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39. What are the suitable conditions for the following transformation ?

A. $KMnO_4 - H_2SO_4/\Delta$
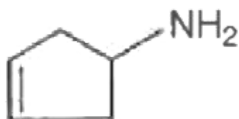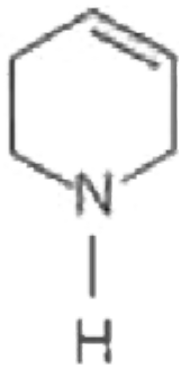
B. $O_3/O_2, Zn + H_2O$

C. OsO_4

D. $Pb(OAc)_4$
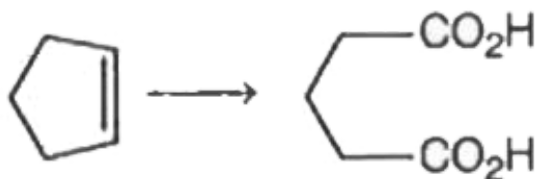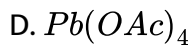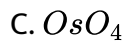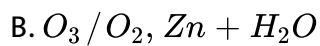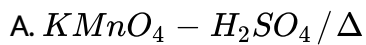
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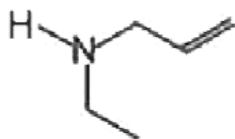**40.** The compound 'A' decolourises Br_2/CCl_4 and releases N_2 gas with HNO_2. The compound 'A' is

A.

B.

C.

D.

Answer:

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