CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 59

Chemistry

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1. Chemicals are added to food for

  A. For their preservation

B. Enhancing their appeal

C. Adding nutritive value in them

D. All the above

Answer: D

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2. Calculate de - Broglie wavelength of an electron having kinetic energy $2.8 \times 10^{-23} J$ electron having kinetic energy $2.8 \times 10^{-23} J$. $(m_e = 9.1 \times 10^{-31} kg)$

A. $9.28 \times 10^{-4} m$

B. $9.28 \times 10^{-7} m$

C. $9.28 \times 10^{-8} m$

D. $9.28 \times 10^{-10} m$

Answer: C

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3. H_2S is more acidic than H_2O. The reason is

A. O - H bond is stronger than S - H bond

B. O - H bond is weaker than S - H bond

C. O is more electronegative than S

D. None of these

Answer: A

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4. The bond order depends on the number of electrons in the bonding and antibonding orbitals. Which of the following statement is/are correct about bond order ?

A. Can have a negative quantity

B. Has always an integral value

C. Can assume any positive or integral or fractional value including zero

D. Is a non - zero quantity

Answer: C

5. Which compound is produced when fluorine reacts with water ?

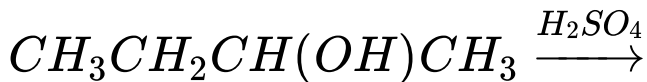   A. HF and O_3

    B. HF and O_2

    C. HF and OF_2

    D. HF, O_2 and O_3

Answer: D

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6. Product formed in the following reaction is

$$CH_3CH_2CH(OH)CH_3 \xrightarrow{H_2SO_4}$$

A. $CH_3CH = CHCH_3$ predominates

B. $CH_2 = CHCH_2CH_3$ predominates

C. Both are formed in equal amounts

D. The amount of production depends on the nature of catalyst

Answer: A

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7. Find out two-third $(2/3)$ life of a first order reaction in which $k = 5.48 \times 10^{-14} s^{-1}$

A. $2.01 \times 10^{11} s$

B. $2.01 \times 10^{13} s$

C. $0.08 \times 10^{13} s$
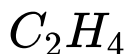
D. $16.04 \times 10^{11} s$

Answer: B

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8. Which of the following statement is incorrect ?

A. C_2H_5Br reacts with alc. KOH to form C_2H_4

B. C_2H_5Br when treated with metallic sodium gives ethane

C. C_2H_5Br when treated with sodium ethoxide forms diethyl ether

D. C_2H_5Br with AgCN forms ethyl isocyanide

Answer: B

9. Which statements are incorrect about transition elements ?

    A. They show variable valency

    B. They readily form complex compounds

    C. All their ions are colourless

D. Their ions contain partially filled d -

   orbital

Answer: C

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10. What amount of bromine will be required

to convert $2g$ of phenol into $2, 4, 6 -$

tribromphenol

A. 4.00

B. 6.00

C. 10.22

D. 20.44

Answer: C

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11. A gas can be liquefied

A. At any temperature

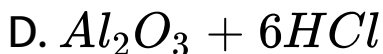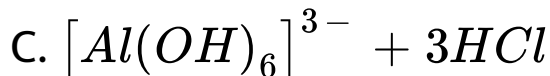B. Above its critical temperature
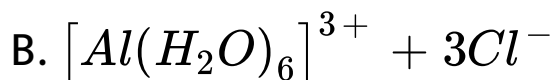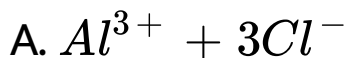
C. At its critical temperature

D. Below its critical temperature

Answer: D

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12. Aluminium chloride exists as a dimer, Al_2Cl_6 in solid state as well as in solution of non-polar solvents such as benzene. When dissolved in water, it gives :

A. $Al^{3+} + 3Cl^-$

B. $[Al(H_2O)_6]^{3+} + 3Cl^-$

C. $[Al(OH)_6]^{3-} + 3HCl$

D. $Al_2O_3 + 6HCl$

Answer: B

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13. Consider the following statement acetophenone can be prepared by

(1) Oxidation of 1-phenylethanol

(2) Reaction of banzylalcohol with methyl magnesium bromide

(3) Friedel-Crafts reaction of benzene with acetyl chloride

(4) Distillation of calcium benzoate

A. 1 & 4

B. 1 & 2

C. 1 & 3

D. 3 & 4

Answer: C

14. The relative abundance of two isotopes of an element with atomic weight 85 and 87 is 75% and 25% respectively. Then calculate the average atomic weight of element

A. 86.0

B. 85.5

C. 75.5

D. 40.0

Answer: B

15. Which one of the following is reduced with zinc and hydrochloric acid to give the corresponding hydrocarbon?

    A. Ethyl acetate

    B. Acetic acid

    C. Acetamide

    D. Butan - 2 - one

Answer: D

16. Which given pair metals can be dissolves in $NaOH$ solution ?

    A. Al , Cu

    B. Zn , Al

    C. Zn , Cu

    D. Zn , Hg

Answer: B

17. The correct explanation for the effect of catalyst on the rate of reversible reaction is

A. It displaces the equilibrium state on right side

B. It increases the kinetic energy of reacting molecules

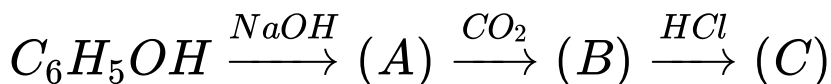C. It provides a new reaction path of low

activation energy

D. It decreases the the velocity of backward

reaction

Answer: C

18. The compound (C) in the given sequence of

reaction is ,

$$C_6H_5OH \xrightarrow{NaOH} (A) \xrightarrow{CO_2} (B) \xrightarrow{HCl} (C)$$

A. chlorobenzene

B. Benzoic acid

C. Salicyladehyde

D. Salicylic acid

Answer: D

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19. In an octahedral structure , the pair of d orbitals involved in d^2sp^2 hybridization is

A. $d_{x^2-y^2}, d_{z^2}$

B. $d_{xz}, d_{x^2-y^2}$

C. d_{z^2}, d_{xz}

D. d_{xy}, d_{yz}

Answer: A

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20. The relation between S (solubility) and K_{sp} (solubility product) for a sparingly soluble binary electrolyte

A. $S = K_{sp}^2$

B. $S = K_{sp}$

C. $\sqrt{S} = \sqrt{K_{sp}}$

D. $S = \dfrac{1}{2}K_{sp}$

Answer: C

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21. The colour of the transition metal ions is

due to

A. d - d transition

B. Change in geometry

C. Variable oxidation states

D. None of these

Answer: A

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22. On heating a mixture containing 1 mole each of Li_2CO_3 and K_2CO_3........is / are formed .

A. 2 moles of CO_2

B. 1 moles of CO_2

C. 1.5 moles of CO_2

D. No carbon dioxide

Answer: B

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23. Addition of HCN to ethyne in presence of $Ba(CN)_2$ as catalyst gives-

A. Ethyl cyanide

B. 1,1 - dicyano ethane

C. Divinyl cyanide

D. Vinyl cyanide

Answer: D

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24. For valence electron of rubidium (Z = 37) ,

the correct set of four quantum number are

A. $5, 1, 0 + \dfrac{1}{2}$

B. $5, 0, 0 + \dfrac{1}{2}$

C. $5, 1, 1 + \dfrac{1}{2}$

D. $6, 0, 0 + \dfrac{1}{2}$

Answer: B

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25. The correct IUPAC name of

$CH_3CH(OH)CH_2CH_2COOH$ is

A. 4 - hydroxypentanoic acid

B. 1 - carboxy - 3 - butanoic acid

C. 1 - carboxy - 4 - butanol

D. 1 - carboxy - 2 - butanol

Answer: A

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26. The pair of a orbitals involved in octahedral structure having d^2sp^3 hybridization , are

A. d_{xy}, d_{yz}

B. d_{x^2}, d_{xz}

C. $d_{x^2-y^2}, d_{z^2}$

D. $d_{xz}, d_{x^2-y^2}$

Answer: C

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27. A condensation polymer among the following is:

A. PVC

B. Dacron

C. Teflon

D. Polystyrene

Answer: B

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28. What is the Van't Hoff factor for sodium phosphate ?

A. 1

B. 2

C. 3

D. 4

Answer: D

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29. What is true about Insulin ?

A. It is an amino acid

B. It is a polypeptide

C. It is a carbohydrate

D. It is a lipid

Answer: B

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30. Characteristics of crystalline solid are

A. Long range order

B. Disordered arrangement

C. Short range order

D. None of these

Answer: A

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31. Which cell converts electrical energy into chemical energy ?

A. Dry cell

B. Electrolytic cell

C. Electrochemical cell

D. None of these

Answer: B

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32. What is the use of Salol ?

A. Antiseptic

B. Analgesic

C. Antipyretic

D. None of these

Answer: A

33. Which factor affect the specific rate constant of a first order reaction ?

A. Time for completion of reaction

B. Concentration of the reactants

C. Concentration of the products

D. Temperature of reaction

Answer: D

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34. Which of the given statement is not true ?

A. Copper pyrites also contain in `FeS_2

B. Zinc blende mainly contain zinc chloride

C. Gold is found in native state

D. Sliver glance mainly contains silver sulphide

Answer: B

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35. A mixture of 2 moles of carbon monoxide and one mole of oxygen in a closed vessel is ignited to get carbon dioxide. If ΔH is the enthalpy change and ΔE is the change in internal energy, then :-

A. $\Delta H = \Delta E$

B. $\Delta > \Delta E$

C. $\Delta < \Delta E$

D. The relationship depends on the capacity of the vessel

Answer: C

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36. The total number possible isomers for the complex compound $\left[Cu^{II}(NH_3)_4\right]\left[Pt^{II}CI_4\right]$ are

A. 3

B. 4

C. 5

D. 6

Answer: D

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37. Diprotic compound among the following are

A. H_3PO_3

B. H_3PO_2

C. $HClO_3$

D. HPO_3
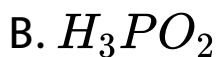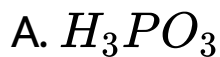
Answer: A

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38. Calculate the number of unpaired electrons in $[Mn(H_2O)_6]^{2+}$, Considering H_2O as a weak field ligand (At . No of Mn = 25)

A. Two

B. Three

C. Four

D. Five

Answer: D

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39. Hyperconjugation

A. Delocalisation of π electrons into a nearby empty orbital.

B. Delocalisation of σ electrons into a nearby empty orbital.

C. The effect of alkyl groups donating a small amount of electron density inductively into a carbocation .

D. The migration of a carbon or hydrogen from one carbocation to another .

Answer: B

40. In Freundlich adsorption isotherm, adsorption is proportional to pressure P as
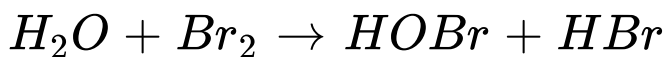
A. P^0

B. P

C. P^n

D. $P^{1/n}$

Answer: D

41. Which is the best description of the behaviour of bromine in the reaction given below

$$H_2O + Br_2 \rightarrow HOBr + HBr$$

    A. Proton acceptor only

    B. Reduced only

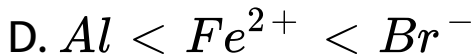   C. Oxidised only

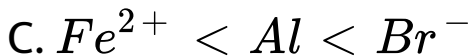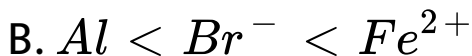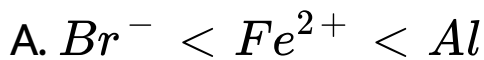D. Both oxidised and reduced

Answer: D

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42. Based on data given below for the electrode potential , reducing power of Fe^{2+} , Al and Br^- will increase in the order

$Br_2(aq) + 2e^- \rightarrow 2Br^-(aq), E^° = +1.08V$

$Al^{3+}(aq) + 3e^- \rightarrow Al(s), E^° = -1.66V$

$Fe^{3+}(aq) + e^{-2} \rightarrow Fe^{+2}(aq), E^° = +0.77V$

A. $Br^- < Fe^{2+} < Al$

B. $Al < Br^- < Fe^{2+}$

C. $Fe^{2+} < Al < Br^-$

D. $Al < Fe^{2+} < Br^-$
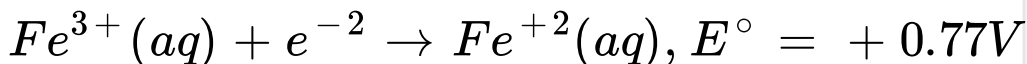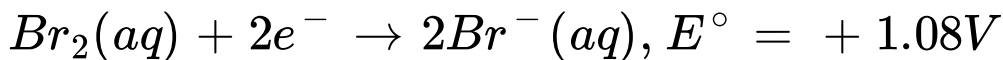
Answer: A

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43. When 20 g of naphthoic acid $(C_{11}H_8O_2)$ is

dissolved   in   50   g   of   benzene   (

$K_f = 1.72 K kgmol^{-1})$,   a   freezing   point

depression of 2K is observed . The van't Hoff

factor (i) is :

A. 0.5

B. 1

C. 2

D. 3

Answer: A

44. In a closed insulated container, a liquid is stirred with a paddle to increase the temperature. Which of the following is true?

A. $\Delta E = W = Q = 0$

B. $\Delta E = W \neq 0, Q = 0$

C. $\Delta E \neq 0, Q = W = 0$

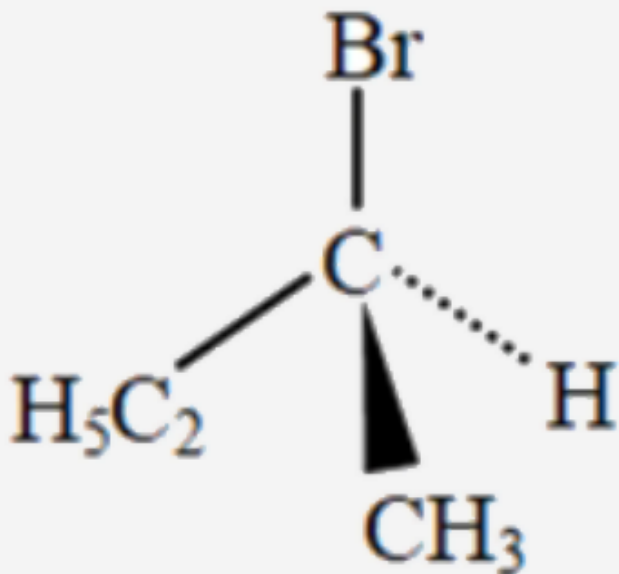D. $\Delta E = Q \neq 0, W = 0$
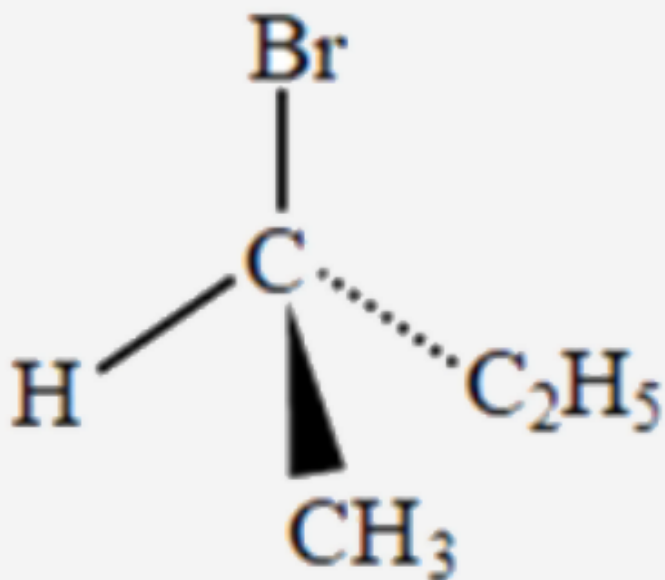
Answer: B

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45. The relation between given pair is

Br
|
C
H_5C_2 .... H
CH₃

and

Br
|
C
H ....C₂H₅
CH₃

A. enantiomers

B. Identical

C. constitutional isomers

D. diastereomers

Answer: A

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