



CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 62

Chemistry

1. A buffer solution can be prepared from a mixture of

1. Sodium acetate and acetic acid in water
2. Excess sodium acetate and hydrochloric acid in water
3. Ammonia and ammonia chloride in water
4. Ammonia and sodium hydroxide in water.

A. 1, 3, 4

B. 2, 3, 4

C. 1, 2, 4

D. 1, 2, 3

Answer: D



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2. The powdered ore is agitated with water or washed with running stream of water. The heavy ore particles and lighter impurities are separated . This method of concentration is known as

A. metallurgy

B. leaching

C. gravity separation

D. froth floatation process

Answer: C



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3. Powdered substances are more effective adsorbents than their crystalline form because

A. adsorption is an exothermic process

B. they become inert and do not react with the adsorbate

C. the extent of adsorption increases with increases in surface area of the adsorbent

D. absorption is more if the size of absorbent is small

Answer: C



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4. 1.4 moles of phosphorus trichloride are present in a sample. How many atoms are there in the sample?

A. 5.6×10^{23}

B. 34×10^{24}

C. 2.4×10^{23}

D. 3.372×10^{24}

Answer: D



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5. A piston filled with 0.04 mol of an ideal gas expands reversibly from 50.0 mL to 375 mL at a constant temperature of 37.0° C . As it does so, it absorbs 208 J of heat. The value of q and w for the process will be:

$$(R = 8.314\text{ J/molK})(\ln 7.5 = 2.01)$$

A. $q = + 208\text{ J}, w = - 208\text{ J}$

B. $q = + 208\text{ J}, w = + 208\text{ J}$

C. $q = - 208\text{ J}, w = + 208\text{ J}$

D. $q = - 208\text{ J}, w = - 208\text{ J}$

Answer: A



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6. What will be the temperature at which a solution containing 6 g of glucose per 1000 g water will boil if molal elevation constant for water is $0.52 \text{ K kg mol}^{-1}$.

A. 100.173°C

B. 100.0173°C

C. 100.173°C

D. None

Answer: B

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7. What will be the uncertainty in velocity of an electron when the uncertainty in its position is 1000 \AA ?

A. $5.79 \times 10^2 \text{ms}^{-1}$

B. $5.79 \times 10^8 \text{ms}^{-1}$

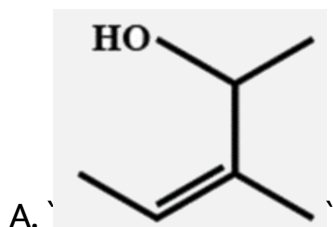
C. $5.79 \times 10^4 \text{ms}^{-1}$

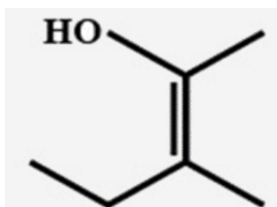
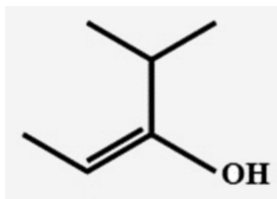
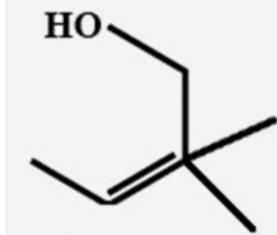
D. $5.79 \times 10^{-10} \text{ms}^{-1}$

Answer: A

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8. Correct representation of 3- methylpent-3-en-2-ol is



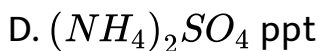


Answer: A

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9. In Kjeldahl's method of estimation of nitrogen, nitrogen is quantitatively converted to ammonium sulphate. It is then

treated with standard solution of alkali. The nitrogen which is present is estimated as



Answer: C



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10. Calcium chloride is used as a dehydrating agent because

A. It has a strong affinity for water

B. It has water of crystalline attached to it

C. it loses water when exposed to air

D. it has a high melting point

Answer: A



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11. An element 'P' has atomic number 56. What will be the formula of its halide?

A. PX

B. PX_2

C. PX_3

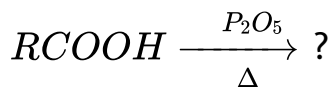
D. P_2X_3

Answer: B



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12. Complete the following reaction



- A. Acid anhydride
- B. Ketone
- C. Aldehyde
- D. Ester

Answer: A



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13. Which of the following does not show similarity between boron and aluminium?

- A. Both form oxides of type M_2O_3 when heated with oxygen at high temperature
- B. Both dissolve in alkalies and evolve hydrogen
- C. Hydroxides of both the elements are basic in nature
- D. Both form nitrides of MN type when heated with N_2

Answer: C



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14. Examples of few solids are given below. Find out the example which is not correctly matched.

A. Ionic solids - NaCl, ZnS

B. Covalent solids - H_2 , I_2

C. Molecular solids - $H_2O(s)$

D. Metallic solids - Cu , Sn

Answer: B



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15. A standard hydrogen electrode has zero electrode potential because :

A. hydrogen can be most easily oxidised

B. hydrogen has only one electron

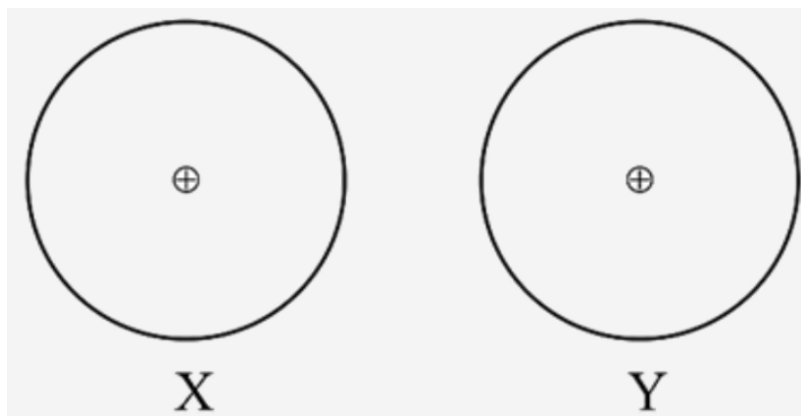
C. the electrode potential assumed to be zero

D. hydrogen is the lightest element

Answer: C

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16. Two atoms X and Y are non-polar and electrically symmetrical



What type of intermolecular force of attraction can be developed between them ?

A. Dipole-induced dipole forces

B. London forces of dispersion force

C. Dipole-dipole forces

D. No forces of any kind

Answer: B



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17. In NH_3 synthesis by Haber's process, what is the effect on the rate of the reaction with the addition of Mo and CO, respectively?

A. Increases and decreases

B. Decreases and decreases

C. Decreases and increases

D. Both Mo and Co increases the rate

Answer: A



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18. For the reaction $N_{2(g)} + O_{2(g)} \rightleftharpoons NO_{(g)}$, the value of K_c at 800°C is 0.1. What is the value of K_p at this temperature?

A. 0.5

B. 0.01

C. 0.05

D. 0.1

Answer: D



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19. Equilibrium constant K is related to E_{cell}° and not E_{cell}

because

A. E_{cell}° is easier to measure than E_{cell}

B. E_{cell} becomes zero at equilibrium point but E_{cell}°

remains constant under all conditions

C. At a given temperature, E_{cell} changes hence value of K

can not be measured

D. Any of the terms E_{cell} or E_{cell}° can be used

Answer: B



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20. In which of the following . Tyndall effect is not observed ?

A. Smoke

B. Emulsion

C. Sugar solution

D. Gold sol

Answer: C



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21. Rate constant of two reactions are given below.

Identifying their order of reaction.

(i) $k = 6.3 \times 10^{-2} \text{ L mol}^{-1} \text{ s}^{-1}$

(ii) $k = 2.8 \times 10^{-4} \text{ s}^{-1}$

- A. (i) second order, (ii) first order
- B. (i) first order, (ii) second order
- C. (i) zero order, (ii) first order
- D. (i) second order, (ii) zero order

Answer: A



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22. Solubility of a substance is its maximum amount that can be dissolved in a specified amount of solvent. It depends upon

(i) nature of solute

(ii) nature of solvent

(iii) temperature

(iv) pressure

A. (i) , (ii) and (iii)

B. (i), (iii) and (iv)

C. (i) and (iv)

D. (i), (ii), (iii) and (iv)

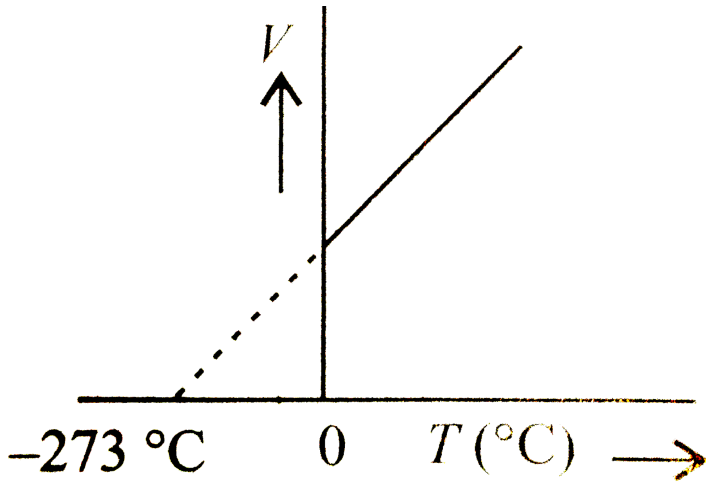
Answer: D



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23. If we plot volume of a certain mass of a gas against temperature at constant pressure , we get a straight line intersecting on the negative side at $-273.^\circ C$ which explains

about absolute zero . This graph is know as



- A. isochor
- B. isotherm
- C. isotone
- D. isobar

Answer: D

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24. Which of the following is not an allylic halide?

- A. 4-bromopent - 2 ene
- B. 3 bromo-2-methylbut-1-ene
- C. 1-bromobut-2-ene
- D. 4-bromobut-1-ene

Answer: D



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25. Ziegler-Natta catalyst is used to prepare

- A. low density polythene
- B. teflon

C. high density polythene

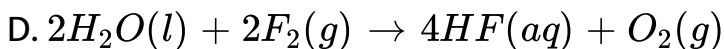
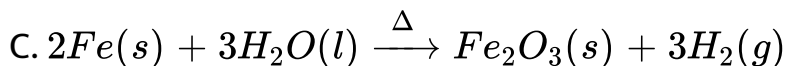
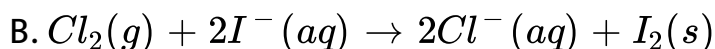
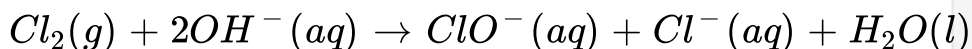
D. nylon-6

Answer: C

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26. Which of the following is a disproportionation reaction?

A.



Answer: A



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27. Which of the following is not a characteristic of alcohol ?

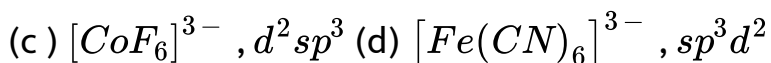
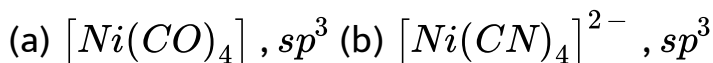
- A. They are lighter than water
- B. Their boiling points rise fairly uniformly with rising molecular weight
- C. Lower members are insoluble in water and organic solvents but the solubility regularly increases with molecular mass
- D. Lower members have a pleasant smell and burning taste, higher members are colourless and tasteless

Answer: C



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28. Which of the following complexes are not correctly matched with the hybridisation of their central metal ion ?



Select the correct option :

A. 1 and 2

B. 2 and 4

C. 1, 3 and 4

D. 2, 3 and 4

Answer: D



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29. Benzaldehyde can be prepared from benzene by passing vapours of and in its solution in presence of catalyst mixture of aluminium chloride and cuprous chloride. The reaction is known as

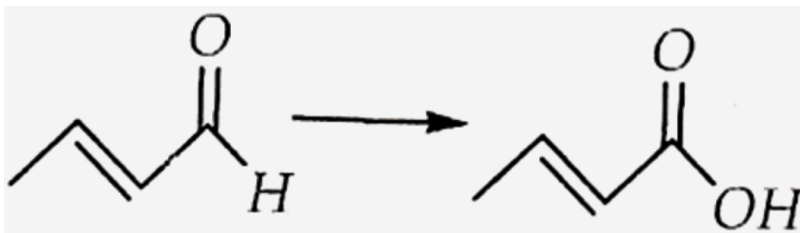
- A. HCl , $SnCl_4$, Rosenmund reduction
- B. Co , HCl , Gattermann-Koch reaction
- C. CO_2 , H_2SO_4 , Clemmensen reduction
- D. O_3 , alcohol, Wolf - Kishner reduction

Answer: B

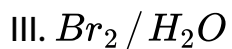
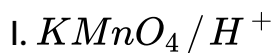


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30.



The above change can be effected by



A. II, III

B. I, II, III

C. I, II

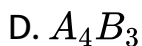
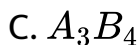
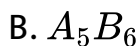
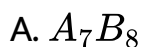
D. only II

Answer: D



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31. An AB solid has $CsCl$ type of structure, where A occupies corner. If the atoms from corners along one of the body diagonal are removed, the formula of the solid would be



Answer: C



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32. One word answer is given for the following definitions, Mark the one which is incorrect.

A. The process in which temperature remains constant ,

Isobaric

B. The process in which volume remains constant ,

Isochoric

C. The relation between ΔH and ΔE when all the

reactants and products are solid : $\Delta H = \Delta E$

D. The relation between

ΔG , ΔH and ΔS : $\Delta G = \Delta H - T\Delta S$

Answer: A



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33. α – helix is a secondary structure of proteins formed by twisting of polypeptide chain into right handed screw like structure. Which type of interactions are responsible for making the α -helix structure stable?

- A. Peptide bonds between - NH_2 group and CO groups of adjacent carbon chains
- B. Hydrogen bonds between - NH of amino acid in one turn with - CO of amino acid to adjacent turn
- C. - OH group of one turn with - CO of amino acid on the turn
- D. Hydrogen bonds between adjacent amino acids

Answer: B



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34. Yellow coloured aqueous solution of sodium chromate changes to orange when acidified with sulphuric acid because

- A. H^+ ions convert chromate ions to dichromate ions
- B. H^+ ions reacts with sodium chromate to give sodium ions which turn solution orange
- C. Cr^{3+} ions are liberated in the solution which turn the solution orange
- D. Sodium hydroxide is formed during the reaction which imparts orange to the solution

Answer: A

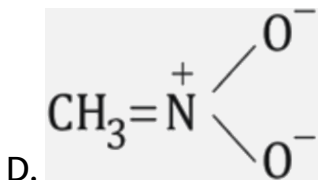
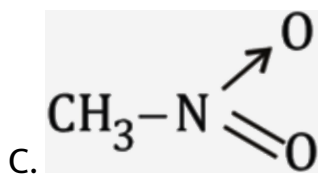
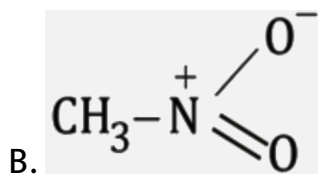
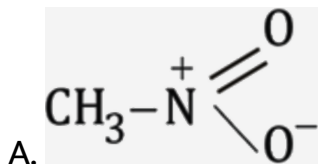


35. Fe^{3+} compounds are more stable than Fe^{2+} compounds because

- A. Fe^{3+} has smaller size than Fe^{2+}
- B. Fe^{3+} has $3d^5$ configuration (half-filled)
- C. Fe^{3+} has higher oxidation state
- D. Fe^{3+} is paramagnetic in nature

Answer: B

36. Which of the following is not a structure of nitromethane molecule?



Answer: D



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37. Arrange the following compounds in increasing order of their reactivity in nucleophilic addition reactions.

(i) Ethanal, Propanal, Propanone, Butanone.

(ii) Benzaldehyde, p-Tolualdehyde, p-Nitrobenzaldehyde, Acetophenone.

Hint: Consider steric effect and electronic effect.

A. Butanone lt Propanone lt Propanal lt Ethanal

B. Propanone lt Butanone lt Ethanal gt Propanal

C. Propanal lt Ethanal lt Propanone lt Butanone

D. Ethanal lt Propanallt Propanone lt Butanone

Answer: A



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38. What mass of hydrochloric acid is needed to decompose 50 g of limestone?

A. 36.5 g

B. 73 g

C. 18.25 g

D. 91.25 g

Answer: A



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39. The value of BOD of highly polluted water is

A. more than 17 ppm

B. more than 5 ppm

C. 1 ppm

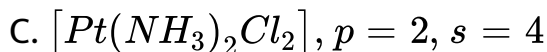
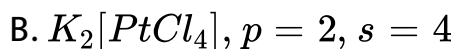
D. 5 ppm

Answer: A



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40. Which of the following primary and secondary valencies are not correctly marked against the compound ?

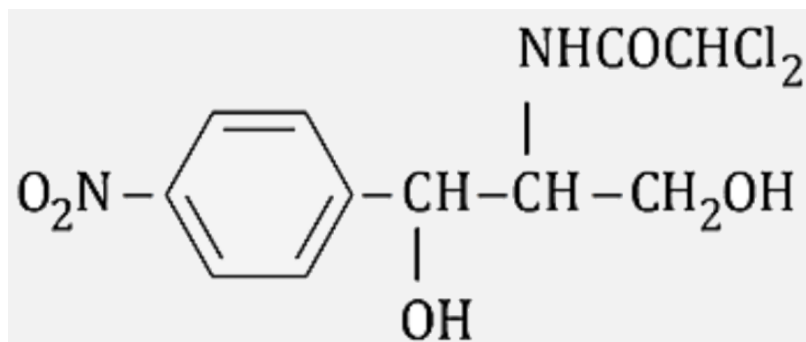


Answer: D



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41. The structure given below is known as



- A. prontosil
- B. sulphapyridine
- C. chloramphenicol
- D. chloroxylenol

Answer: C



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42. If one strand of DNA has the sequence ATGCTTGA, the sequence in the complimentary strand would be

A. TCCGAACT

B. TACGTAGT

C. TACGAATC

D. TACGAACT

Answer: D



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43. What is the lowest value of n that allows g orbitals to exist?

A. 6

B. 7

C. 4

D. 5

Answer: D



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44. The shape of water molecule, which should be tetrahedral has a bent or distorted tetrahedral shape with a bond angle 104.5° . What could be the reason for this ?

A. lp - lp repulsion is more than lp- bp repulsion

B. lp-bp repulsion is more than lp- lp repulsion

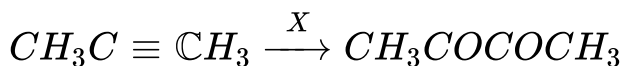
C. lp-lp repulsion is equal to lp-bp repulsion

D. presence of lone pair does not affect the bond angle

Answer: A

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45. For the reaction given below, identify X in the reaction



A. $K_2Cr_2O_7 / H_2SO_4$

B. O_2

C. $O_3, Zn / H_2O$

D. HNO_3

Answer: C



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