CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 60

Chemistry

1. 10 mL citric acid $(H_3C_6H_5O_7)$ is neutralised completely by 35.6 mL of 0.312 M NaON solution. The molarity of the solution of citric acid is

A. 1.11 M

B. 0.45 M

C. 0.11 M

D. 0.37 M

Answer: D

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2. Which one of the following relationships when graphed does not give a straight line for helium gas?

I. K.E. and T at constant pressure and volume

II. P v/s V at constant temperature for a constant mass

III. V v/s 1/T at constant pressure for a constant mass

A. II and III

B. I and III

C. II

D. III

Answer: A

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3. An aqueous solution contains 5% by mass of urea and 10% by mass of glucose . If K_f for water is $1.86 \ \mathrm{k\,mol}^{-1}$, the freezing point of the solution is

A. $-3.03K$

B. $3.03K$

C. $-3.03^\circ C$

D. $3.03^\circ C$

Answer: C

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4. $\left[Fe(NO_2)_3Cl_3\right]$ and $[Fe(O-NO_3Cl_3]$ are

A. linkage isomers

B. geometrical isomers

C. optical isomers

D. hydrate isomers

Answer: A

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5. The heat of neutralisation of a strong base and a strong acid is 13.7 kcal. The heat released when 0.6 mole HCl solution is added to 0.25 of NaOH is

A. 3.425 kcal

B. 8.22 kcal

C. 11.645 kcal

D. 13.7 kcal

Answer: A

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6. The equivalent conductance of a substance is 1/3rd of the molar conductance . The time required to electrolyse 3 moles the substance using a current of 9 ampere is

A. 4808 min

B. 1608 min

C. 2408 min

D. 2008 min

Answer: B

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7. Edge length of cube is 300 pm. Its body diagonal would be:

A. 600 pm

B. 423 pm

C. 519.6 pm

D. 450.5 pm

Answer: C

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8. The principal buffer present in human blood is

A. NaH_2PO_4 / Na_2HPO_4

B. CH_3COOH / CH_3COONa

C. H_2CO_3 / HCO_3^-

D. CH_3COONH_4

Answer: C

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9. Electrophilic aromatic substitution is difficult in

A. $p - NH_2C_6H_4CO_2H$

B. $p - CH_3OC_6H_4CO_2H$

C. $P - NO_2 - C_6H_4CO_2H$

D. $p - ClC_6H_4CO_2H$

Answer: C

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10. Consider the following species, 1.0_2^{2-}, $2.\ Co^+$, $3.\ O_2^+$ Among these , sigma bond alone is present in

A. 1 alone

B. 2 alone

C. 3 alone

D. 1 and 2

Answer: A

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11. Which of the following statements is not correct ?

A. The first ionization energies in $\left(kJmol^{-1}\right)$ of carbon , silicon , germanium , tin and lead are 1086 , 786 , 761 ,708 and 715 respectively

B. Down the group , ionization energy decreases regularly from B to T1 in boron family

C. Among oxides of the elements of carbon family , CO is neutral , GeO is acidic and SnO is amphoteric.

D. The 4f and 5f - inner transition elements are placed separately at the bottom of the periodic table

Answer: B

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12. The de-Brogile wavelength of a neutron at 927° C is λ. What will be its wavelength at 27° C?

A. $\lambda/2$

B. λ

C. 2λ

D. 4λ

Answer: C

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13. Green fuel is the obtained from

A. bio - waste

B. metal - waste

C. plastic waste

D. chemical waste

Answer: A

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14. The number of moles of $KMnO_4$ that will be needed to react with one mole of sulphite ion in acidic solution is

A. $\frac{2}{5}$

B. 1

C. $\frac{4}{5}$

D. $\frac{3}{5}$

Answer: A

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15. Which of the following has the highest value for bond order $-C_6H_6, CO_3^{2-}, NO^-$ and SO_4^{2-} ?

A. C_6H_6

B. CO_3^{2-}

C. NO^-

D. SO_3

Answer: C

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16. An alloy of copper and gold crystallizes in cubic lattic, in which the $Au-$ atoms occupy the lattice points at the corners of cube and $Cu-$ atoms occupy the centre of each face. The formula of this alloy is :

A. $AuCu_3$

B. Au_2Cu

C. AuCu

D. Au_3Cu

Answer: A

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17. BF_3 on reaction with sodium hydride produces

A. B_2F_6

B. B_2H_{10}

C. B_2F_6

D. B_2H_6

Answer: D

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18. Among (i) $C_6H_5NH_2$ (ii) CH_3NHCH_3 (iii) $(CH_3)_2NCH_3$ and (iv) NH_3 , the correct order of basic strength follows the order

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

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

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

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

Answer: A

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19. The pH of aqueous solution of magnesium hydroxide is 9.0 . If K_{sp} of magnesium hydroxide is $1.0 \times 10^{-11} M^3$, then the concentration of magnesium ions in the solution is

A. $10^{-7} M$

B. $10^{-2} M$

C. $0.1 M$

D. $10^{-6} M$

Answer: C

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20. Plotting $\log_{10} t_{1/2}$ against $\log_{10}[A_0]$ (where A_0 is the initial concentration of a reactant) for a fist order reaction the slope will be

A. -2

B. Zero

C. $+1$

D. -1

Answer: B

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21. The most basic hydroxide from the following is

A. $Pr(OH)_3(Z = 59)$

B. $Sm(OH)_3(Z = 62)$

C. $Ho(OH)_3(Z = 67)$

D. $La(OH)_3(Z = 57)$

Answer: D

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22. The IUPA name of $\left[Co(NH_3)_4Cl(NO_2)\right]Cl$ is

A. tetraamminechloridonitrito - N - cobalt (III) chloride

B. tetraamminechloridonitritocobalt (II) chloride

C. tetraamminechloridonitritocobalt (I) chloride

D. tetraamminechloridonitritocobalt (III) chloride

Answer: A

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23. Excess of ammonia with sodium hypochloride solution in the presence of glue or gelatine gives

A. $NaNH_2$

B. NH_2NH_2

C. N_2

D. NH_4Cl

Answer: B

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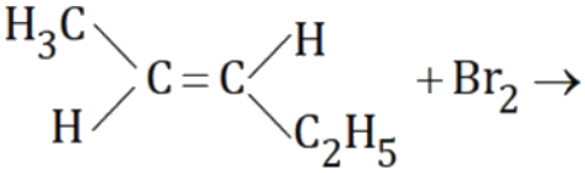
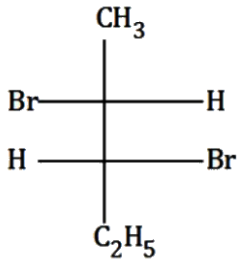
24. The major products obtained in the following reaction is/are



A.



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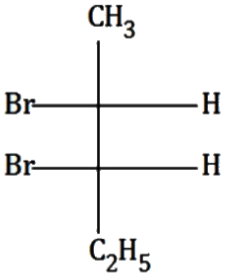
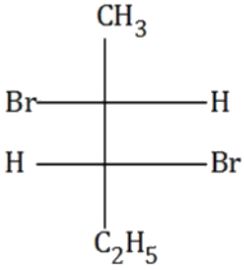
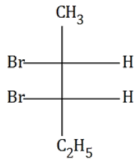


C.



D.



Answer: A,C

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25. The ease of hydrolysis in the compounds

$\underset{(I)}{CH_3COCl}, \underset{(II)}{CH_3CO-O-COCH_3}, \underset{(III)}{CH_3COOC_2H_5}$ and $\underset{(IV)}{CH_3CONH_2}$

is of the order

A. $I > II > III > IV$

B. $IV > III > II > I$

C. $I > II > IV > III$

D. $II > I > IV > III$

Answer: A

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26. The borax bead is due to formation of

A. metal meta borates

B. metal tetra borates

C. boron trioxide

D. metal oxides

Answer: A

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27. A sample of gas contracts by 1 litre against a constant pressure of 0.1 atm while 5.13 J heat it lost to surroundings. The change in internal energy, U of the system is

A. 10.26 J

B. 5.0 J

C. 5.64 J

D. 4.0 J

Answer: B

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28. An olefinic compound on reductive ozonolysis produces formaldehyde, acetaldehyde and 1, 3-propanedial. The IUPAC name of the alkene is

A. 1, 4-Hexadiene

B. 2-Methyl-1, 3-pentadiene

C. 1, 2-Hexadiene

D. None of these

Answer: A

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29. Which of the following will be most stable diazonium salt $RN_2^+X^-$?

A. $CH_3N_2^+X^-$

B. $C_6H_5N_2^+X^-$

C. $CH_3CH_2N_2^+X^-$

D. $C_6H_5CH_2N_2^+X^-$

Answer: B

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30. Which is not true above white phosphorus?

A. 6 P - P single bods

B. 4 P - P single bonds

C. 4 long pair of electrons

D. P - P - P angle of 60°

Answer: B

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31. Alcohol (ROH) does not react with NaBr to form alkyl bromide because

A. NaBr is in soluble in alcohol

B. Br^- is strong base than OH^-

C. NaBr is an ionic compound

D. OH^- is a strong base than Br^-

Answer: D

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32. Which is the correct order of ionic sizes ?

(Atomic no . : Ce = 58 , Sn = 50 , Yb = 70 and Lu)

A. $Ce^{3+} > Sn^{2+} > Yb^{3+} > Lu^{3+}$

B. $Sn^{2+} > Yb^{3+} > Ce^{3+} > Lu^{3+}$

C. $Sn^{2+} > Ce^{3+} > Yb^{3+} > Lu^{3+}$

D. $Lu^{2+} > Yb^{3+} > Sn^{3+} > Ce^{3+}$

Answer: C

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33. Which of the following does not produce any gaseous product when reacts with water?

A. Ca_3N_2

B. CaC_2

C. CaO

D. Ca_3P_2

Answer: C

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34. Which of the following is involved in the extraction of Ag from argentite ?

A. $\left[Ag(NH_3)_2\right]^+$

B. $\left[Ag(SCN)_4\right]^3$

C. $\left[Ag(CN)_2\right]^-$

D. $\left[AgCl_2\right]^-$

Answer: C

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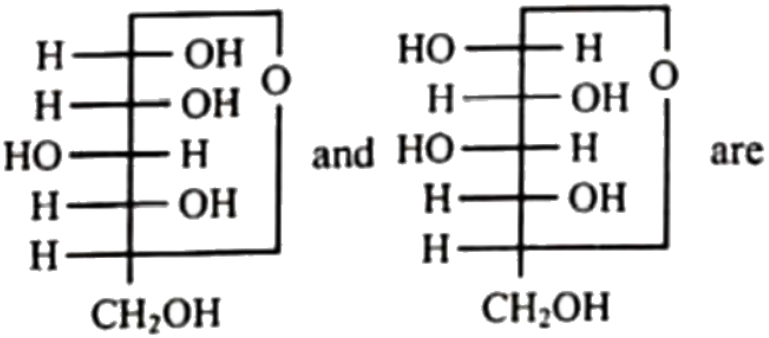
35. Choose the correct option for the given structure



A. Diasteromers

B. Enantiomers

C. Tautomers

D. Conformers

Answer: A

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36. Which of the following is not oxidized by aqueous Br_2 ?

A. D - fructose and D - ribulose

B. D - galactose and D - erythrulose

C. D - mannose and d - fructose

D. D - glucose and d - ribose

Answer: A

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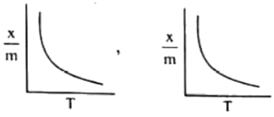
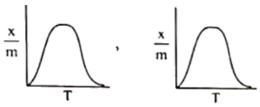
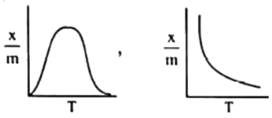
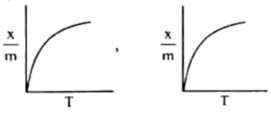
37. Select correct adsorption isobars for chemisorption and physisrption respectively (where $\frac{x}{m}$ = extent of adsorption , T = temperature)

A. 

B. 

C. 

D. 

Answer: C

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38. (xii) Which is known as 'blister copper' ?

A. Pure copper

B. 98% copper

C. Ore of copper

D. Alloy of copper

Answer: B

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39. Which of the following sets of quantum numberrs discribes the elecron which is removed most easily from a potassium atom in its ground state ?

A. $n = 3, l = 1, m_l = 1, m_s = -\frac{1}{2}$

B. $n = 2, l = 1, m_l = 0, m_s = -\frac{1}{2}$

C. $n = 4, l = 0, m_l = 1, m_s = +\frac{1}{2}$

D. $n = 4, 1 = 0, m_l = 0, m_s = +\frac{1}{2}$

Answer: D

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40. Which of the following statements are incorrect about phenol formaldehyde resin ?

A. Novolac or resol is a linear polymer and is used in the manufacture of adhesive

B. Bakelite is a cross linked polymer and is used in making switches and plugs

C. Novolac is prepared when (P/F) (phenol/formaldehyde) ratio if greater than 1, whereas bakelite is prepared when (P/F) ratio is less than 1

D. Novolac is prepared when $P/F < 1$, and bakelite is prepared when $P/F > 1$

Answer: D

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41. Salt $P + H_2SO_4 \rightarrow R \xrightarrow{BaCl_2}$ white ppt (P) is paramagnetic in nature and contains about 55% K .So (P) is

A. KO_2

B. K_2O

C. K_2SO_4

D. K_2O_2

Answer: A

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42. The incorrect structure of glycine at given pH are :

A. $H_3\overset{\oplus}{N}CH_2 - \underset{\underset{O}{||}}{C} - OH \quad \text{at} \quad pH = 2.0$

B. $H_3\overset{\oplus}{N}CH_2 - \underset{\underset{O}{||}}{C} - O^- \quad \text{at} \quad pH = 6.0$

C. $H_2NCH_2 - \underset{\underset{O}{||}}{C} - O^- \quad \text{at} \quad pH = 9$

D. $H_2NCH_2 - \underset{\underset{O}{||}}{C} - OH$ at $pH = 12$

Answer: D

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43. In a hydrogen atom, the transition takes place from n = 3 to n = 2 . If Rydberg constant is $1.097 \times 10^7 m^{-1}$, the wavelength of the emitted radiation is

A. $\frac{36}{5R_H}$

B. $\frac{5R_H}{36}$

C. $\frac{3}{4R_H}$

D. $\frac{4}{3R_H}$

Answer: A

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44. For the following pattern of hybridization shown by the central atom,

sp	sp^2	sp^3	sp^3d
(1)	(2)	(3)	(4)

which of the following options represent the correct sequence of hybridisation , i.e according to the sequence mentioned above ?

A. H_2O, CO_2, BF_3, PCl_5

B. CO_2, H_2O, BF_3, PCl_5

C. CO_2, BF_3, H_2O, PCl_5

D. H_2O, CO_2, PCl_5, BF_3

Answer: C

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45. Which of the following is known as freon which is used as a refrigerant ? .

A. CF_2Cl_2

B. CF_4

C. $CFCl_3$

D. CF_3Cl

Answer: A

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