





CHEMISTRY

NTA MOCK TESTS ENGLISH

NTA NEET SET 55



1. Gd (64) hasunpaired electrons with sum of spin

A. 7,3.5

B. 8,3

C. 6,3

D. 8,4

Answer: D

2. 2.4 g of pure Mg (at. Mass = 24) is dropped in 100 mL of 1 M HCl . Which

of the following statement is wrong ?

A. 1.12 L of hydrogen is produced at S.T.P

B. 0.05 mol of magnesium is left behind

C. HCl is the limiting reagent

D. 0.005 mol of magnesium is left behind

Answer: D

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3. An element with atomic mass 100 has a bcc structure and edge length400 pm. The density of element is

A. $2.144g/cm^3$

B. $5.188g/cm^3$

C. $7.289g/cm^3$

D. $10.376g/cm^3$

Answer: B

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4. The bonding electrons and lone pairs present in $I_3^{\,-}$ are respectively:

A. 12

B. 3

C. 6

D. 9

Answer: D

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5. Consider the following reaction $xMnO_4^- + yC_2O_4^{2-} + zH^+
ightarrow xMn^{2+} + 2yCO_2 + rac{z}{2}H_2O$

The values of x, y and z in the reaction are, respectively

A. 10,2,5,2

B. 2,5,2,10

C. 6,4,2,4

D. 3,5,2,10

Answer: B

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6. The number of possible optical isomers for complexes MA_2B_2 with sp^3 and dsp^2 hybridized metal atoms, respectively, is :

Note A and B are unidentate neutral and unidentate monoanionic ligands, respectively.

A. 2 and 2

B. O and O

C. 0 and 2

D. 0 and 1

Answer: B

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7. For the reaction , $2SO_2 + O_2 \Leftrightarrow 2SO_3$, the rate of disappearance of O_2 is $2 \times 10^{-4} mol L^{-1} s^{-1}$. The rate of appearance of SO_3 is

A.
$$2 imes 10^{-4} mol L^{-1} s^{-1}$$

 $\mathrm{B.4} \times 10^{-4} mol L^{-1} s^{-1}$

C.
$$1 imes 10^{-4} mol L^{-1} s^{-1}$$

D.
$$6 imes 10^{-4} mol L^{-1} s^{-1}$$

Answer: B

8. Zine can be coated on iron to produce galvanized iron but the reverse

is not possible it is because

A. Zinc is lighter than iron

B. Zinc has lower melting point than iron

C. Zinc has lower negative electrode potential than iron

D. Zinc has higher negative electrode potential than iron

Answer: D

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9. The $\left[H^+
ight]$ of a resulting solution that is 0.01 M acetic acid $\left(K_a=1.8 imes10^{-5}
ight)$ and 0.01 M in benzoic acid $\left(K_a=6.3 imes10^{-5}
ight)$:

A. $9 imes 10^{-4}$

 $\mathsf{B.81}\times10^{-4}$

 ${
m C.9 imes10^{-5}}$

D. $2.8 imes10^{-3}$

Answer: A

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10. At $35^{\circ}C$, the vapour pressure of CS_2 is 512 mm Hg and that of acetone is 344 mm Hg. A solution of CS_2 in acetone has a total vopour pressure of 600 mm Hg. The false statement amongst the following is

A. A mixture of 100 mL CS_2 and 100 mL acetone has a volume

< 200 mL

- B. Roult's law is not obeyed by this system
- C. Heat must be adsorbed in order to produce the solution at $35\,^\circ C$
- D. CS_2 and acetone are less attracted to each other than to

themselves

Answer: A

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11. Which of the following compounds is not chiral ?

A. CH_3CHDCH_2Cl

 $\mathsf{B.}\, CH_3 CH_2 CHDCl$

 $\mathsf{C.}\,DCH_2CH_2CH_2Cl$

D. $CH_3CHClCH_2D$

Answer: C

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12. The order of the oxidation state of the phos- phorus atom in $H_3PO_2, H_3PO_4, H_3PO_3$ and $H_4P_2O_6$ is : -

A. $H_3PO_4 > H_3PO_2 > H_3PO_3 > H_4P_2O_6$

B. $H_3PO_4 > H_2P_2O_6 > H_3PO_3 > H_3PO_2$

C. $H_3PO_2 > H_3PO_3 > H_4P_2O_6 > H_3PO_4$

D. $H_3PO_4 > H_3PO_2 > H_3PO_4 > H_4P_2O_6$

Answer: B

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13. Silver chloride dissolves in excess of NH_4OH . The cation present in solution is.

A. $\left[Ag(NH_3)_6\right]^+$

 $\mathsf{B.}\left[Ag(NH_3)_4\right]^+$

C. Ag^+

D. $\left[Ag(NH_3)_2
ight]^+$

Answer: D

14. Arrang the anions (p) $\stackrel{-}{C}H_3$, $(q)\stackrel{-}{N}H_2$, $(r)OH^-$, $(s)F^-$, in decreasing order of their basic strength .

A. $p>q> \ >r>s$

 $\mathsf{B.}\, q > p > r > s$

 $\mathsf{C.}\, r > q > p > s$

 $\mathsf{D}.\, r > p > q > s$

Answer: A

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15. The product of the reaction is

$$Me \xrightarrow{1.R_2BH} 2.H_2O_2/NaOH \rightarrow$$



Answer: B



16. The reaction of H_2O_2 with H_2S is an example ofreaction .

A. addition

B. oxidation

C. reduction

D. redox

Answer: D



17. Which of the following is not correct statement for periodic classification of elements?

- A. The properties of the elements are the periodic functions of their atomic numbers
- B. Non metallic elements are lesser in number than the metallic elements
- C. The first ionization energies of the elements along a period do not vary in a regular manner with increase in atomic number

D. For transition elements , the d - electrons are filled monotonically

with increase in atomic number

Answer: D



18. What is the density of solution of sulphuric acid used as an electrolyte in lead accumulator ?

A. $1.5gL^{-1}$

B. $1.2gL^{-1}$

 $C. 1.8 gL^{-1}$

D. $2.0gL^{-1}$

Answer: B

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19. Which of the following common elements is/are present in the anode

mud in electrolytic refining of copper ?

A. Sn and Ag

B. Pb and Zn

C. Ag and Au

D. Fe and Ni

Answer: C



20.
$$PhMgBr + rac{(1)X}{(2)H^{\oplus}}Ph - rac{OH}{C} - Ph$$

X is

$$\begin{array}{c} & \overset{O}{\overset{||}{_{||}}} \\ {\rm A.} \ Ph - \overset{O}{\overset{||}{_{C}}} - H \\ \\ {\rm B.} \ Ph - \overset{O}{\overset{||}{_{C}}} - Ph \\ {\rm C.} \ Ph - \overset{O}{\overset{|}{_{C}}} - H \\ & \overset{O}{\overset{|}{_{Ph}}} \\ {\rm D.} \ Ph - \overset{O}{\overset{|}{_{C}}} - CH_3 \end{array}$$

Answer: B



21. Which of the following statement is correct for $[Mn(CN)_6]^{3-}$ according to valence bond theory ?

A. It is sp^3d^2 hybridised and tetrahedral

B. It is d^2sp^3 hybridised and octahedral

C. It is dsp^2 hybridised and square planar

D. It is sp^3d^2 hybridised and octahedral

Answer: B



22. The correct order of atomic radii in group 13 elements is

A.
$$Al > Ga < In < TI$$

- $\mathsf{B.}\,Ga < Al < In < TI$
- C. Al < In < Ga < TI
- D. Al > Ga < TI < In

Answer: B



23. Identify the monosaccharide containing only one asymmetric carbon atom in its molecule.

A. Ribulose

B. Ribose

C. Erythrose

D. Glyceraldehyde

Answer: D

24. Which of the following compounds is (S) - 4 - chloro - 1methylcyclohexene ?



Cl

Β.

A.



Answer: A



25. When equal volume of the following solutions are mixed , which of the following gives maximum precipitate ? $\left(K_{sp} ~~{
m of}~~AgCl=10^{-12}
ight)$

A.
$$10^{-4}MAg^+$$
 and $10^{-4}MCl^-$

B. $10^{-3}MAg^+$ and $10^{-3}MCl^-$

 $C. 10^{-5} MAg^+$ and $10^{-5} MCl^-$

D. $10^{-6}MAg^+$ and $10^{-6}MCl^-$

Answer: B



26. The correct order of increasing bond angles in the following species is

- A. $ClO_2^- < Cl_2O < ClO_2$
- $\mathsf{B.}\,Cl_2O < ClO_2 < ClO_2^-$
- $\mathsf{C.} \mathit{ClO}_2 < \mathit{Cl}_2 \mathit{O} < \mathit{ClO}_2^-$
- $\mathsf{D.} \mathit{ClO}_2 < \mathit{ClO}_2^- < \mathit{ClO}_2$

Answer: D

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27. The maximum prescribed concentration of copper in drinking water is:

A. 0.005	
B. 3	
C. 2	
D. 5	

Answer: A

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A. $CH_3CHOHCH_3$

B. CH_3COCH_3

 $\mathsf{C.}\, CH_3 CH_2 OH$

 $\mathsf{D.}\, CH_3 COOH$

Answer: A



29. The maximum number of 90° angles between bond pair-bond pair of electrons is observed in

A. sp^3d^2 hybridisation

B. sp^3 dhybridisation

C. dsp^3 hybridisation

D. dsp^2 hybridisation

Answer: A



30. Calculate the energy in joule corresponding to light of wavelength 45

A. $6.67 imes10^{11}$

B. $4.42 imes 10^{-15}$

 $\text{C.}\,6.67\times10^{15}$

D. 4.42 \times 10^{-18}

Answer: D

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31. 1.0 g of magnesium is burnt with 0.56 g O_2 in a closed vessel. Which reactant is left in excess and how much? (At.wt: Mg=24, O = 16)

A. Mg , 5.8 g

B. Mg , 0.58 g

 $\mathsf{C}.\,O_2,\,0.24\,\mathsf{g}$

D. O_2 , 2.4 g

Answer: B



32. Which of the following carboxylic acids is a tricarboxylic acid?

A. Citric acid

B. Malonic acid

C. Succinic acid

D. Malic acid

Answer: A



33. Metal carbides on reaction with H_2O form CH_4 , Carbide can be

A. CaC_2

 $\mathsf{B.}\, Mg_3C_2$

 $\mathsf{C}.\,Be_2C$

D. All of these

Answer: C

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34. Which of the following carbocations is most stable ?



A. I

B. II

C. III

D. IV

Answer: B

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35. Calculate the wok done during combustion of 0.138 kg of ethanol, $C_2H_5OH_{(l)}$ at 300 K. Given: R = 8.314 J $K^{-1}mol^{-1}$, molar mass of ethanol = 46 g mol^{-1} .

A. - 7482J

B. 7482 J

 ${\rm C.}-2494J$

D. 2494 J

Answer: B



36. When SO_2 gas is passed into aqueous Na_2CO_3 , the product (s) formed is (are)

A. $NaHSO_4$

 $\mathsf{B.}\,Na_2SO_2$

 $C. NaHSO_3$

D. Na_2SO_3 and $NaHSO_3$

Answer: D



37. The correct match between items of List - I and List - II is

	List - I		List - II
(A)	Coloured impurity	(P)	Steam distillation
(B)	Mixture of o – nitrophenol and p – nitrophenol	(Q)	Fractional distillation
(C)	Crude Naphtha	(R)	Charcoal treatment
(D)	Mixture of glycerol and sugars	(S)	Distillation under reduced pressure

A. 1 - R, 2 - S, 3 - P, 4 - Q

B. 1 - R , 2 - P, 3 - Q , 4 - S

C. 1 - P, 2 - P, 3 - Q, 4 - S

D.1-R,2-P,3-S,4-Q

Answer: B

38. An organic compound "X" having molecular formula $C_5H_{10}O$ yields phenyl hydrazone and gives negative response to the lodoform test and Tollen's test. It produces n-pentant on reduction. 'X' could be:

A. pentanal

B. 2 - pentanone

C. 3 - pentanone

D. amyl alcohol

Answer: B

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39. The equilibrium constant of the following are :

$$egin{array}{lll} N_2+3H_2&\Leftrightarrow 2NH_3&K_1\ N_2+O_2&\Leftrightarrow 2NO&K_2\ H_2+rac{1}{2}O_2&
ightarrow H_2O&K_3 \end{array}$$

The equilibrium constant (K) of the reaction :

 $2NH_3+rac{5}{2}O_2 \stackrel{k}{\Longleftrightarrow} 2NO+3H_2O,$ will be (a) $K_1 K_3^3 \,/\, K_2$ (b) $K_2 K_3^3 \,/\, K_1$ (c) K_2K_3/K_1 (d) $K_2^3 K_3 / K_1$

A.
$$K_1$$
. $\frac{K_2}{K_3}$
B. K_2 . $\frac{K_3^3}{K_1}$
C. K_2 . $\frac{K_3^2}{K_1}$
D. K_2^2 . $\frac{K_3}{K_1}$

Answer: B

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40. Which one of the following is an example of a thermosetting polymer?

A. Bakelite

B. PVC

C. Nylon 6, 6

D. Buna - S

Answer: A

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41. for the given PV isotherms , which of the following is correct for T_1, T_2, T_3 ?



A. $T_1 < T_2 < T_3$

- B. $T_3 < T_2 < T_1$
- C. $T_2 < T_3 < T_1$
- D. $T_1 < T_3 < T_2$

Answer: A

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42. The difference between \overline{C}_p and \overline{C}_v is $[\overline{C}_p \text{ and } \overline{C}_v \text{ signify molar quantities }]$

A. larger is case of gases in comparison to solids and liquids

B. large in case of liquids in comparison to gas and solids

C. larger in case of solids in comparison to gas and liquids

D. equal solids , liquids and gases

Answer: A

43. Barbiturates acts as

A. hypnotics

B. antimicrobials

C. antacids

D. antiseptics

Answer: A

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44. What will be the product when benzaldehyde is treated with NaOD in D_2O ?

A. $C_2H_5CH_2OD$ and C_6H_5COONa

B. $C_2H_5CH_2OD$ and C_6H_5COOD

 $C. C_6H_5CHDOD$ and C_6H_5COONa

D. $C_6H_5COOCHDC_6H_5$

Answer: A

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45. What is the correct explanation of the non - reducing property of sucrose ?

A. α - D - glucopyranose and β - D - fructofuranose are linked via

 C_2 and C_1 centres respectively

B. α - D - glucopyranose and β - D - fructofuranose are linked via

 C_1 and C_2 centres respectively

C. α - D - glucopyranose and β - D - fructofuranose are linked via

 C_2 and C_2 centres respectively

D. α - D - glucopyranose and β - D - fructofuranose are linked via

 $C_3 \; \text{ and } \; C_4 \; \text{centres respectively}$

Answer: B

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