CHEMISTRY

BOOKS - NTA MOCK TESTS

NTA NEET SET 99

Chemistry

1. In a photoelectric experiment , the stopping potential V_s is plotted against the frequency v of the incident light . The resulting curve is a straight line which makes an angle θ with the v - axis. Then

$\tan\theta$ will be equal to (Here E_0 = work function of the surface_

A. $\frac{h}{e}$

B. $\frac{e}{h}$

C. $-\frac{\phi}{e}$

D. $\frac{eh}{\phi}$

Answer: A

Watch Video Solution

2. What is not applicable to $TeCl_4$?

A. The molecule is Sea - saw shaped

B. It is tetrahedral in shape

C. It has 4 bond pair and 1 lone pair of electron

D. The hybrid state of Te is sp^3d

Answer: B

Watch Video Solution

3. Which one of the following compounds does not show tautomerism ?

A. $CH_3 - CH_2 - NO_2$

B. $CH_3 - \overset{\overset{CH_3}{|}}{\underset{\underset{CH_3}{|}}{C}} - NO$

C. $CH_3 - NH - \overset{\overset{O}{||}}{C} - CH_3$

D. $CH_3 - \overset{\overset{O}{||}}{C} - \underset{\underset{CH3}{|}}{CH} - COOC_2H_5$

Answer: B

Watch Video Solution

4. 0.5 gm of fuming H_2SO_4 (Oleum) is diluted with water. This solution is completely neutralised by 26.7 ml of 0.4 M $NaOH$ solution. Calculate the

percentage of free SO_3 in the given sample. Give your answer excluding the decimal places.

A. $30.6\ \%$

B. $40.6\ \%$

C. $20.6\ \%$

D. $50.6\ \%$

Answer: C

Watch Video Solution

5. Arrange the following metals in the increasing order of their densities. K,Sc, Ti and Ca

A. $K < Ca < Sc < Ti$

B. $Ti < Sc < Ca < K$

C. $Sc < Ti < K < Ca$

D. $Sc < Ti < Ca < K$

Answer: A

Watch Video Solution

6. Which of the following has maximum angle strain ?

A. Propane

B. Cyclopropane

C. n - butane

D. Cyclobutane

Answer: B

Watch Video Solution

7. The root mean square velocity of helium gas becomes the same as that of methane molecule at $327^{\circ} C$, when the temperature is

A. 300 K

B. 450 K

C. 150 K

D. 1200 K

Answer: C

Watch Video Solution

8. How many cyclic alcohols are possible with molecular formula C_4H_8O ?

A. 3

B. 4

C. 5

D. 6

Answer: B

Watch Video Solution

9. Which of the oxides is strong oxidizing agent ?

A. SiO_2

B. GeO_2

C. SnO_2

D. PbO_2

Answer: D

Watch Video Solution

10. A compound AB has a rock salt type structure with A:B=1:1 . The formula weight of AB is 6.023 y amu and the closest A-B distance is $y^{1/3}$ nm. Calculate the density of lattice (in kg/m^3)

A. $1.5 \mathrm{kgm}^{-3}$

B. $2.5 \mathrm{kgm}^{-3}$

C. $5.0 \mathrm{kgm}^{-3}$

D. $7.5 \mathrm{kgm}^{-3}$

Answer: C

Watch Video Solution

11. The formula of sulphamic acid is

A. H_2NSO_2

B. $(NH_2)_2SO_2H$

C. NH_2SO_2OH

D. None of these

Answer: C

Watch Video Solution

12. A haloalkane can be reduced to an alkane with the help of HI in presence of red phosphorus. Red phosphorus

A. acts as reducing agent

B. acts as dehydrating agent

C. is used to regenerate HI

D. acts as a catalyst

Answer: C

Watch Video Solution

13. What is the hybrid state and oxidation state of sulphur in Caro's acid ?

A. $sp^2, +10$

B. $sp^3, +10$

C. $sp^3, +6$

D. $sp^2, +6$

Answer: C

Watch Video Solution

14. A 550 K, the K_c for the following reaction is $10^4 mol^{-1} L$

$$X(g) + Y(g) \Leftrightarrow Z(g)$$

At equilibrium, it was observed that

$$[X] = \frac{1}{2}[Y] = \frac{1}{2}[Z]$$

What is the value of [Z] (in mol L^{-1}) at equilibrium ?

A. 2×10^{-4}

B. 10^{-4}

C. 2×10^{4}

D. 10^{4}

Answer: A

 Watch Video Solution

15. The ratio of areas within the elctron orbits for the first excited state to the ground sate for hydrogen atom is

A. $16:1$

B. $4:1$

C. $8:1$

D. $2:1$

Answer: A

Watch Video Solution

16. Reagent (s) used for the conversion of propanol into propane is

A. I_2 / P

B. (i) TsCl/Py (ii) $LiAlH_4$

C. Cone. H_2SO_4

D. CH_2N_2 /ether

Answer: B

Watch Video Solution

17. Among the following ions, which one has the highest paramagnetism ?

A. $\left[Cr(H_2O)_6\right]^{3+}$

B. $\left[Fe(H_2O)_6\right]^{2+}$

C. $\left[Cu(H_2O)_6\right]^{2+}$

D. $\left[Zn(H_2O)_6\right]^{2+}$

Answer: B

Watch Video Solution

18. In the given reaction $CH_3 - C \equiv Ch \xrightarrow{HOBr} [X]$

[X] will be

A. $CH_3 - \overset{\overset{O}{||}}{C} - CH_2Br$

B. $CH_3 - \overset{\overset{O}{||}}{C} - CBr_3$

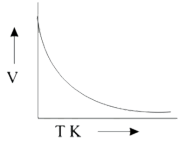
C. $CH_3 - \overset{\overset{O}{||}}{C} - CHBr_2$

D. $CH_3 - \overset{\overset{O}{||}}{C} - CHBr$

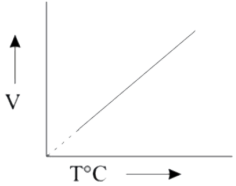
Answer: A

Watch Video Solution

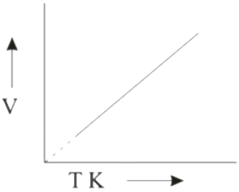
19. Which of the following is a correct plot of the volume of fixed amount of ideal gas as a function of temperature (at constant pressure)

A. 

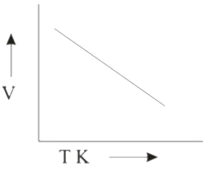
B.



C.



D.



Answer: C

Watch Video Solution

20. The emf of the following three galvanic cells :

1. $Zn/Zn^{2+}(1M)\ |\ \ |\ Cu^{2+}(1M)/Cu$

2. $Zn/ZN^{2+}(1M)\mid\mid Cu^{2+}/cu$3. Zn//Zn^(2+) (1 M) || Cu^(2+) (0.1 M) Cu$arerepersentedby$E_1, E_2, E_3` which of the following statement is true ?

A. $E_1 > E_2 > E_3$

B. $E_3 > E_1 > E_2$

C. $E_3 > E_2 > E_1$

D. $E_2 > E_1 > E_3$

Answer: D

Watch Video Solution

21. The bond having the highest bond energy is :

A. C = C

B. C = S

C. C = O

D. P = N

Answer: C

Watch Video Solution

22. An acid type indicator, H In differs in colour from its conjugate base $\left(In^{-}\right)$. The human eye is sensitive to colour differences only when the ratio $\left[In^{-}\right]/[HIn]$ is greater than 10 or smaller than 0.1. What should to observe a complete colour change ? $\left(K_a = 1.0 \times 10^{-5}\right)$

A. 4

B. 2

C. 6

D. 1

Answer: B

Watch Video Solution

23. The colour of transition metal ion is attributed to:

A. small size metal ions

B. absorption of light in UV region

C. complete (ns) subshell

D. incomplete (n-1) d subshell

Answer: D

Watch Video Solution

24. The vapour pressure of a pure liquid 'A' is 70 torr at $27^{\circ}C$. It forms an ideal solution with another liquid B. The mole fraction of B is 0.2 and total pressure of the solution is 84 torr at $27^{\circ}C$. The vapour pressure of pure liquid B at $27^{\circ}C$ is :

A. 14

B. 140

C. 156

D. 70

Answer: B

Watch Video Solution

25. Cannizzaro reaction is given by _____.

A. $CH_3 - CH_2 - CHO$

B. $CD_3 - CHO$

C. $CH_3 - \underset{\underset{CH_3}{|}}{CH} - CHO$

D. $CH_3 - CHO$

Answer: C

Watch Video Solution

26. In the complex, potassium pentacyanonitrosylvandate (0), the number of potassium atoms per molecule and the coordination number of central metal ion are respectively

A. 5,5

B. 4,6

C. 5,6

D. 4,4

Answer: C

Watch Video Solution

27. The total molarity and normality of all the ions present in a solution containing 0.1 M of $CuSO_4$ and 0.1 M of $Al_2(SO_4)_3$ is

A. 0.2 M, 0.2 N

B. 0.7 M , 1.6 N

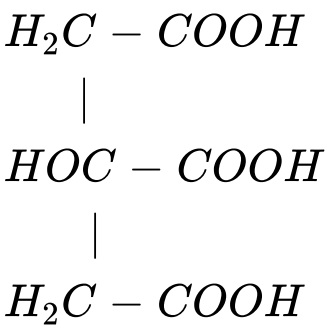
C. 0.8 M, 1.6 N

D. 1.6 M , 1.6 N

Answer: B

Watch Video Solution

28. Assign the IUPAC name for the following compound.



A. 2-hydroxypentan, -1,5-dioic acid

B. 2-carboxy - 2 - hydroxypentan -1,5-dioic acid

C. 2-hydroxypropan -1,2,3- tricarboxylic acid

D. 3 - hydroxypentan -1,2,3 - trioic acid

Answer: C

Watch Video Solution

29. When acetone and chloroform are mixed together, H - bonding takes place between them. Such a liquid pair shows

A. $+ve$ deviation from Raoult's law

B. $-ve$ deviation from Raoult's law

C. no deviation from Raoult's law

D. slight increase in volume

Answer: B

Watch Video Solution

30. In the given reaction

$$R-\overset{\overset{O}{||}}{C}-OH \xrightarrow{[X]} R-\overset{\overset{O}{||}}{C}-O-CH_3$$

[X] will be:

A. CH_2N_2

B. CH_3OH

C. CH_3COOH

D. Both CH_2N_2 and CH_3OH/H_2SO_4

Answer: D

Watch Video Solution

31. Linear polyenes on ozonolysis gives two moles of acetaldehyde and one mole of propanedinal. Linear polyene will be

A. Alkadiene

B. Alkatriene

C. Alkatetraene

D. Alkapentaene

Answer: A

Watch Video Solution

32.

$CH_3 - C \equiv N \xrightarrow{H_2O/\Delta} (A) \xrightarrow{H_2O/H^+} (B)(A)$ and (B)

respectively are

A. $CH_3 - \overset{\overset{O}{||}}{C} - NH_2$ and CH_3COOH

B. CH_3COONH_4 and CH_3COOH

C. CH_3CONH_2 and CH_3COONH_4

D. $CH_3 - CH = NH$ and CH_3COOH

Answer: A

Watch Video Solution

33. The movement of sol particles under and applied electric field is called

A. electro deposition

B. electrodialysis

C. electro - osmosis

D. electrophoresis

Answer: D

Watch Video Solution

34. K_a for HCN is $5 \times 10 \wedge (-10)$ at $25^\circ C$. For maintaining a constant pH of 9.0, the volume of $5MKCN$ solution required to be added to $10mL$ of $2MHCN$ solution is

A. 4 mL

B. 8 mL

C. 2 mL

D. 9 mL

Answer: C

Watch Video Solution

35. In the reaction sequence

$$CH_3 - C \equiv C - H \xrightarrow{NaNH_2} [X] \xrightarrow{HCHO} [Y]$$

[Y] will be

A. $CH_3 - CH = CH_2$

B. $CH_3 - C \equiv C - CH_2OH$

C. $CH_3 - C \equiv C - CHO$

D. $CH_3 \equiv C - COONa$

Answer: B

Watch Video Solution

36. When a lead storage battery is discharged

A. SO_2 is evolved

B. lead is formed

C. lead sulphate is consumed

D. sulphuric acid is consumed

Answer: D

Watch Video Solution

37. Hydride of certain non - metallic element X is amphoteric in nature. It also reacts with sodium

hydride as well with metallic sodium to liberate dihydrogen gas. The element X can be

A. Nitrogen

B. Carbon

C. Oxygen

D. Sulphur

Answer: C

Watch Video Solution

38. In the reaction sequence $CH_3CHO \xrightarrow{NH_2OH / \overset{\oplus}{H}} (A) \xrightarrow{P_2O_5 / \Delta} (B)$, B will be

A. $CH_3CH = NOH$

B. $H_2C = NOH$

C. CH_3CN

D. $CH_3CH_2NH_2$

Answer: C

Watch Video Solution

39. At 300 K, half life of a gaseous reactant initially at 58 KPa is 320 min. When the pressure is 29 KPa, the half life is 160 mm. The order of the reaction is

A. 1

B. 2

C. 3

D. 0

Answer: D

 Watch Video Solution

40. If an endothermic reaction is non - spontaneous at freezing of water and becomes feasible at its boiling point, then

A. ΔH is - ve, ΔS is +ve

B. ΔH and ΔS both are +ve

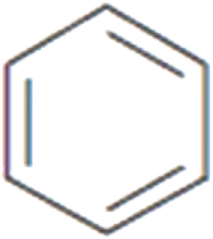
C. ΔH and ΔS both are -ve

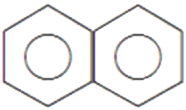
D. ΔH is +ve, ΔS is -ve

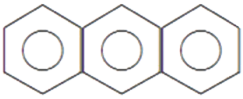
Answer: B

Watch Video Solution

41. Which one of the following compounds is non - benzenoid ?

A. 

B. 

C. 

D. 

Answer: D

Watch Video Solution

42. Match the thermodynamic properties (List - I) with their relation (List - II)

	List-I		List-II
P.	Free energy change $\left(\Delta G\right)$	1.	$-RT\log_e K$
Q.	Entropy changes ΔS°	2.	$-nFE$
R.	ΔH° enthalpy change of a reaction in standard state	3.	$RT^2\left(\frac{d\ln K}{dT}\right)_P$
S.	Standard free energy change (ΔG°)	4.	$-\left\{\frac{d\Delta G}{dT}\right\}_P$

Select the correct answer from the given codes

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

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

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

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

Answer: B

Watch Video Solution

43. Which among the following compounds will form intra - molecular hydrogen bond ?

A. Acetone

B. Nitroethane

C. 2,3-pentanedione

D. Benzaldehyde

Answer: C

Watch Video Solution

44. Which of the conformers of n - butane has maximum potential energy ?

A. Anti

B. Gauche

C. Fully eclipsed

D. Eclipsed

Answer: C

Watch Video Solution

45. Pick out the incorrect statement about ATP.

A. It is a nucleotide

B. It contains the purine, adenine

C. The enzyme - catalysed hydrolysis ATP is ADP and AMP is accompanied by absorption of energy

D. Energy is stored in the cell in form of ATP

Answer: C

Watch Video Solution