CHEMISTRY

BOOKS - TARGET CHEMISTRY (HINGLISH)

MODEL QUESTION PAPER

Model Question Paper I

1. For the reaction , $A_{(s)} + 3B_{(g)} \rightarrow 4C_{(s)} + D_{(l)}$.

$\Delta H \text{and} \Delta U$ are related as_____.

A. $\Delta H = \Delta U$

B. $\Delta H = \Delta U + 3RT$

C. $\Delta H = \Delta U + RT$

D. $\Delta H = \Delta U - 3RT$

Answer: D

Watch Video Solution

2. Calcualte percentage composition of O atoms in CH_3COOH.

A. $53\ \%$

B. $26\ \%$

C. $75\ \%$

D. $16\ \%$

Answer: A

Watch Video Solution

3. The rate constant k_1 and k_2 for two different reactions are $10^{16}e^{-2000/T}$ and $10^{15}e^{-1000/T}$, respectively. The temperature at which $k_1 = k_2$ is

A. 1000K

B. $\frac{2000}{2.303}K$

C. 2000K

D. $\frac{1000}{2.303}K$

Answer: D

Watch Video Solution

4. $C_6H_5 - O - CH_3$ is named as :

A. hexyl methyl ether

B. benzyl methyl ether

C. methyl phenyl ether

D. benzyl ethyl ether

Answer: C

Watch Video Solution

5. In the representation of galvanic cells, a double vertical line between two solutions indicates_____.

A. direct contact between them

B. that they are connected by a salt bridge

C. the phase boundary

D. the metal electrodes

Answer: B

Watch Video Solution

6. In alkaline hrodrolysis of methyl bromide, _____.

A. rate of reaction depends only on the concentration of methyl bromide.

B. rate of reaction is dependent of concentration of base used

C. rate of reaction doubles, if concentration of any reactant is doubled.

D. rate of reaction remains the same if concentrations of both the reactions are doubled.

Answer: C

Watch Video Solution

7. Which of the following is TRUE for $\left[Fe(CN)_6\right]^{3-}$ and $[FeF_6]^{3-}$?

A. Both are paramagnetic

B. $\left[Fe(CN)_6\right]^{3-}$ is paramagnetic and $[FeF_6]^{3-}$ is diamagnetic.

C. $\left[Fe(CN)_6\right]^{3-}$ is diamagnetic and $[FeF_6]^{3-}$ is paramagnetic

D. Both are diamagnetic

Answer: A

Watch Video Solution

8. C-Cl bond of chlorobenzene in comparison to C-Cl bond of methyl chloride is

A. longer and weaker

B. shorter and weaker

C. shorter and stronger

D. longer and stronger

Answer: C

Watch Video Solution

9. The monomers DMT and ethylene glycol are used in the synthesis of _____.

A. teflon

B. dacron

C. orlon

D. bakelite

Answer: B

Watch Video Solution

10. Which of the following is INCORRECT ?

A. Propan-1-ol and propan-2-ol have the same molecular weight

B. Propan-1-ol and propan-2-ol have the same functional group.

C. Propan-1-ol and propan-2-ol exhibit chain isomerism.

D. Propan-1-ol and propan-2-ol contain sp^3 hybridised oxygen atom.

Answer: C

Watch Video Solution

11. Given below are the half -cell reactions

$Mn^{2+} + 2e^- \rightarrow Mn, E^\circ = -1.18V$

$Mn^{3+} + e^- \rightarrow Mn^{2+}, E^\circ = +1.51V$

The E° for $3Mn^{2+} \rightarrow Mn + 2Mn^{3+}$ will be _____.

A. $-2.69V$, the reaction will not occur

B. $-2.69V$, the reaction will occur

C. $-0.33V$, the reaction will not occur

D. $-0.33V$, the reaction will occur

Answer: A

Watch Video Solution

12. _____ is used as cryogenic agent for carrying out various experiments at low temeperatures.

A. Liquid xenon

B. Liquid argon

C. Liquid helium

D. Liquid krypton

Answer: C

View Text Solution

13. In the following reaction, the oxidation state of S changes from _____.

$$C + 2H_2SO_4 \rightarrow CO_2 + 2SO_2 + 2H_2O$$

A. $+4$ to $+6$

B. $+6$ to $+4$

C. $+6$ to $+2$

D. $+4$ to $+2$

Answer: B

Watch Video Solution

14. Reaction between diazonium fluoroborate and sodium nitrite in presence of copper replaces diazonium group with_____.

A. $-NO_3$ group

B. $-NO_2$ group

C. $-NO$ group

D. $-CN$ group

Answer: B

Watch Video Solution

15. In Rasching process, Chlorobenzene is converted into phenol by _____.

A. aq.NaOH and Dil. HCl

B. steam and calcium phosphate

C. ait and dil. H_2SO_4

D. HNO_2 and dil. H_2SO_4

Answer: B

Watch Video Solution

16. 1 mole of H_2 gas has a volume of 25 mL at 20° C and at a certain pressure. At what temperature, the volume will be doubled if the pressure is kept constant ?

A. 313° C

B. 40° C

C. $293^\circ C$

D. 333° C

Answer: A

Watch Video Solution

17. For a zero order reaction, the plot of concentration of a reactant vs time is (intercept refers to concentration axis)

A. positive slope and zero intercept

B. positive slope and non-zero intercept

C. negative slope and zero intercept

D. negative slope and non-zero intercept

Answer: D

Watch Video Solution

18. The enthaply change accompanying the formation of one mole of a compound form its elements, all the substances being in their standard states, is called as _____.

A. ethalpy of formation

B. standard heat of formation

C. ethalpy of solution

D. standard ethaply of combustion

Answer: B

Watch Video Solution

19. The oxoacid of chlorine which has two Cl=O bond is _____.

A. hypochloruous acid

B. chloruos acid

C. chloric acid

D. perchloric acid

Answer: C

Watch Video Solution

20. N_2 molecule contains_____.

A. one σ bond and two π bonds

B. two σ bonds and one π bonds

C. one σ bonds and one π bond

D. three σ bonds and no π bond

Answer: A

Watch Video Solution

21. The coordination number of the spheres in the two dimensional hexagonal close packing is _____.

A. 2

B. 4

C. 6

D. 8

Answer: C

Watch Video Solution

22. During a process, a system absorbs $710J$ of heat and does work. The change in ΔU for the process is $460J$. What is the work done by the system?

A. 250 J

B. $-250J$

C. 460 J

D. $-460J$

Answer: B

Watch Video Solution

23. Which of the following is INCORRECT about insulin?

A. It contains 51 amino acids.

B. It is a peptide hormone.

C. It controls protein metabolism in the body.

D. It lowers the blood sugar.

Answer: C

Watch Video Solution

24. Which of the following reaction represents Mendius reduction ?

A.

$$R-\overset{H}{\overset{|}{C}}=N-OH+4[H]\xrightarrow{Na/ethanol}R-CH_2-NH_2+H_2O$$

B. $R-C\equiv\ +4[H]\xrightarrow{Na/ethanol}R-CH_2-NH_2$

C. $R-\overset{O}{\overset{||}{C}}-NH_2\xrightarrow[(ii)\,H_3O^+]{(i)\,LiALH_4/diethylether}R-CH_2-NH_2$

D. $R-NO_2+6[H]\xrightarrow{Sn/Conc,HCl}R-NH_2+2H_2O$

Answer: B

Watch Video Solution

25. The sum of the number of protons, neutrons and electrons in tritium is _____.

A. 2

B. 3

C. 4

D. 5

Answer: C

Watch Video Solution

26. Which of the following artificial sweeter contains chlorine atoms in its structure ?

A. Saccharin

B. Aspartame

C. Sucralose

D. Aliame

Answer: C

Watch Video Solution

27. The current in a given wire is 1.8 A. The number of coulombs thaat flow in 1.36 minutes will be _____.

A. 100C

B. 147C

C. 247C

D. 347C

Answer: B

Watch Video Solution

28. Which of the following alkene on hydration would give tert-butyl alcohol ?

A. Ethylene

B. Isobutylene

C. Propylene

D. n-Butylene

Answer: B

Watch Video Solution

29. The resistance of a 0.01 M solution of KCl is 480 ohm. When measured in a cell having cell constant $0.68cm^{-1}$. The molar conductivity (in $\text{ohm}^{-1}cm^2mol^{-1}$) of 0.01 M KCl solution is _____.

A. 141.7

B. 326.4

C. 680

D. 705

Answer: A

Watch Video Solution

30. Which of the following characteristics of the transition metals is associated with their catalytic activity ?

A. Variable oxidation states

B. High enthalpy of ionization

C. High melting points

D. Colour of hydrated ions

Answer: A

View Text Solution

31. Schiff's reagent is _____.

A. $CuSO_4$ solution + alkaline potassium tartarate solution

B. ammoniacal silver nitrate solution

C. p-rosaaniline hydrochloride solution +SO_2

D. potassium dichromate in dil. H_2SO_4

Answer: C

View Text Solution

32. Which of the following functional group does NOT contain carbonyl carbon ?

A. Aldehyde

B. Ester

C. Carbocylic acid

D. Ether

Answer: D

Watch Video Solution

33. Which of the following is a dicarboxylic acid ?

A. Lactic acid

B. Citric acid

C. Benzoic acid

D. Adipic acid

Answer: D

Watch Video Solution

34. Which of the following has the highest boiling point ?

A. $CH_3CH_2CH_2CH_2CH_2CH_3$

B. $CH_3\underset{\underset{CH_3}{|}}{\overset{\overset{CH_3}{|}}{C}}HCH_2CH_2CH_3$

C. $CH_3\underset{\underset{CH_3}{|}}{C}CH_2CH_3$

D. $CH_3\underset{\underset{CH_3}{|}}{C}H\underset{\underset{CH_3}{|}}{C}HCH_3$

Answer: A

Watch Video Solution

35. Pure aniline is a :

A. colourless solid

B. brown coloured solid

C. colourless liquid

D. brown coloured liquid

Answer: C

Watch Video Solution

36. 50 g of solute is dissolved in 0.95 Kg of the solvent. The mass percent of the solute in the solution is _____.

A. $0.5\ \%$

B. $0.95\ \%$

C. $5\ \%$

D. $9.5\ \%$

Answer: C

Watch Video Solution

37. The order of the strength of M-X bond of halides of a non-metal(M) is _____.

A. $M-F<M-Cl<M-Br<M-I$

B. $M-F>M-Cl>M-Br>M-I$

C. $M-F<M-Cl>M-Br>M-I$

D. $M-Cl>M-F>M-Br>M-I$

Answer: B

Watch Video Solution

38. At same temeperature , 0.5 M solution of sucrose is isotonic with _____.

A. 0.5 M NaCl solution

B. 0.5 M $MgCl_2$ solution

C. 0.5 M urea solution

D. 0.5 M NH_4Cl solution

Answer: C

Watch Video Solution

39. When 0.01 mole of sugar is dissolved in 100 g of a solvent the despersion is frezzing point is $0.40^\circ C$. When 0.03 mole of glucose

is dissolved in 50 g of the same solvent , the depression in freezing point will be _____.

A. $0.60^\circ C$

B. $0.80^\circ C$

C. $1.60^\circ C$

D. $2.40^\circ C$

Answer: D

Watch Video Solution

40. Which of the following metals has electronic confriguation of $[Xe]6s^2$?

A. Calcium

B. Strontium

C. Barium

D. Radium

Answer: C

Watch Video Solution

41. An example of halide ore is

A. galena

B. bauxite

C. copper glance

D. cryolite

Answer: D

Watch Video Solution

42. Nitroalkanes can be reduced by using _____.

A. $LiAlH_4$

B. Fe/Conc. HCl

C. H_2/Raney Ni

D. all of these

Answer: D

Watch Video Solution

43. The complex $\left[Pt(NH_3)_6\right]Cl_4$ furnishes _____ ions in aqueous solution.

A. 5

B. 4

C. 3

D. 2

Answer: A

Watch Video Solution

44. Lactic acid is a classical example of _____.

A. position isomerism

B. geometrical isomerism

C. optical isomerism

D. chain isomerism

Answer: C

Watch Video Solution

45. Finely divided catalyst is more effective because_____.

A. it increases activation energy

B. it shifts the equilibrium position to the left hand side

C. it provides greater surface area

D. it increases the rate of forward reaction

Answer: C

View Text Solution

46. Among $H_2S, H_2O, H_2Se, \text{and} H_2Te$,the one with highest boiling point is _____.

A. H_2O

B. H_2S

C. H_2Se

D. H_2Te

Answer: A

Watch Video Solution

47. What moles of an ideal gas occupy 0.224L volume at 273 K and 760 mmHg pressure /

A. 10

B. 1

C. 0.1

D. 0.01

Answer: D

Watch Video Solution

48. Chromate ion has _____ structure .

A. octahedral

B. tetrahedral

C. square planar

D. square pyramidal

Answer: B

View Text Solution

Model Question Paper Ii

1. Which of the following compounds does NOT exist ?

A. PF_5

B. $SbCl_5$

C. NCl_5

D. AsF_5

Answer: C

Watch Video Solution

2. Which of the following compound can occur in enatiomeric form ?

A. 

B. 

C. 

D. 

Answer: B

View Text Solution

3. The only aldehyde that undergoes haloform reaction is _____.

A. formaldehyde

B. acetaldehyde

C. benzaldehyde

D. propionaldehyde

Answer: B

Watch Video Solution

4. The number of moles of $Ca(OH)_2$ which contains 4 moles of oxygen atoms is _____.

A. 1

B. 2

C. 4

D. 8

Answer: B

Watch Video Solution

5. The degree of dissociation (α) of a weak electrolyte A_xB_y is related to Van't Hoff factor

(i) by the expression _____.

A. $\alpha = \frac{i-1}{(x-y-1)}$

B. $\alpha = \frac{i-1}{(x+y+1)}$

C. $\alpha = \frac{(x+y-1)}{i-1}$

D. $\alpha = \frac{x+y+1}{i-1}$

Answer: A

View Text Solution

6. Which of the following alcohols CANNOT be preapred by the action of a suitable Grignard reagent on an aldehyde or a ketone followed by hydrolysis/

A. Ethyl alcohol

B. Isopropyl alcohol

C. n-Propyl alcohol

D. Methyl alcohol

Answer: D

View Text Solution

7. Which reagent can be used to estimate Ni^{2+} ions ?

A. dmg

B. EDTA

C. Py

D. Cn^-

Answer: A

View Text Solution

8. Experimentally determined molecular weight of acetic acid in benzene ,comes out to be twice of its original molecular weight. This is because of _____.

A. resonance structure

B. intermolecular hydrogen bonding

C. formation of dimer due to intermolecular H-bonding

D. presence of carbonyl group

Answer: C

View Text Solution

9. To precipitate negatively charged sol, which cation is the most effective ?

A. Na^+

B. Mg^{2+}

C. K^{+}

D. Al^{3+}

Answer: D

View Text Solution

10. The magnetic moment of a complex ion is 1.73 BM. The complex ion is _____.

A. $\left[Co(NH_3)_6\right]^{3+}$

B. $\left[Ni(CN)_4\right]^{2-}$

C. $[CoF_6]^{3-}$

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

Answer: D

Watch Video Solution

11. An aqueous solution freezes at 272.814 K . The boiling point of the same solution is _____.

$\left(K_r = 1.86 Km^{-1}, K_b = 0.512 Km^{-1}\right)$

A. $100.186^\circ C$

B. $100.512^\circ C$

C. $99.949^\circ C$

D. $100.0512^\circ C$

Answer: D

Watch Video Solution

12. Chlorine dissolves in water in absence of sunlight and at ordinary temperatures to form compounds A and B. The compound B decomposes on exposure to sunlight to give compound A and nascent oxygen. The compounds A and B are _____ respectively.

A. HCl and $HOCl$

B. H_2O_2 and $HOCl$

C. HCl and Cl_2O

D. ClO_2 and HCl

Answer: A

Watch Video Solution

13. In C_{60} carbon atoms from _____.

A. hexagons and octagons

B. pentagons and triangles

C. hexagons and pentagons

D. squares and quadrilaterals

Answer: C

Watch Video Solution

14. Acetone and benzene can be seperated from their mixture by _____.

A. simple distillation

B. fractional crystallisation

C. steam distillation

D. fractional distillation

Answer: D

View Text Solution

15. For making tyres,___is added to natural rubber during vulcanization.

A. 1%-3% sulphur

B. 3%-10% sulphur

C. 20%-30% sulphur

D. 30%-50% sulphur

Answer: B

Watch Video Solution

16. If $C(s) + O_2(g) \rightarrow CO_2(g) + 94.2$ Kcal

$H_2(g) + \frac{1}{2}O_2(g) \rightarrow H_2O(l) + 68.3$ Kcal

$CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O + 210.8$ Kcal

then the heat of formation of methane will be

A. 47.3 kcal

B. -20.0kcal

C. 45.9 kcal

D. -47.3 kcal

Answer: B

Watch Video Solution

17. Hybridisation of O-atom in alcohol is _____.

A. Sp^3

B. sp^2

C. sp

D. $sp^s d^2$

Answer: A

Watch Video Solution

18. The unit of entropy is

A. $Jmol^{-1}$

B. $JKmol^{-1}$

C. $JK^{-1}mol^{-1}$

D. $J^{-1}K^{-1}mol^{-1}$

Answer: C

Watch Video Solution

19. The IUPAC name of above compound is _____.

A. N-Methyl-N-propylpropan-1-amine

B. N-Methyl-N-butylpropan-2-amine

C. N-Methyl-N-Propylbutan-2-amine

D. N-Propyl-N-methylbutan-1-amine

Answer: C

Watch Video Solution

20. in transition elements, the oribitals partly or incompletely filled by electrons are _____.

A. s- orbitals

B. p-Orbitals

C. d-Orbitals

D. f-Orbitals

Answer: C

View Text Solution

21. If $60cm^3$ of ethyl alcohol is mixed in water to form $360cm^3$ of dilute ethyl alcohol solution, then the percentage by volume of ethyl alcohol in water is _____.

A. $16.67\ \%$

B. $17.05\ \%$

C. $17.86\ \%$

D. $18.96\ \%$

Answer: A

Watch Video Solution

22. Which of the following follows Anti-Markownikoff's addition ?

A. $CH_3CH = CH_2 + HBr \xrightarrow{Peroxide} CH_3CHBr - CH_3$

B. $CH_3CH = CH_2 + HBr \xrightarrow{Peroxide} CH_3CH_2CH_2Br$

C. $CH_3CH = CH_2 + HCl \xrightarrow{Peroxide} CH_3CH_2CH_2Cl$

D. $CH_3CH = CH_2 + HI \xrightarrow{Peroxide} CH_3CHI - CH_3$

Answer: B

Watch Video Solution

23. The compexes $\left[Co(NH_3)_6\right]\left[Cr(C_2O_4)_3\right]$ and $\left[Cr(NH_3)_6\right]\left[Co(C_2O_4)_3\right]$

A. linkage

B. geometrical

C. coordination

D. ionisation

Answer: C

Watch Video Solution

24. Chlorobenzene can be converted into phenol by heating it with excess of caustic soda at 613K, under pressure. This is known as _____.

A. Dow's process

B. Koble's process

C. Raschig process

D. Wurtz reaction

Answer: A

Watch Video Solution

25. Which of the following is CORRECT expression of calculating the cell potential of an electrochemical cell ?

A. $E = E^{\circ} - \frac{RT}{nF} In \frac{[products]}{[reactants]}$

B. $E = E^{\circ} + \frac{RT}{nF} In \frac{[products]}{[reactants]}$

C. $E = E^{\circ} - \frac{RT}{nF} In \frac{[reactants]}{[products]}$

D. $E = - \frac{RT}{nF} In \frac{[products]}{[reactants]}$

Answer: A

View Text Solution

26. Which of the following metals forms nitride with nitrogen /

A. Lithium

B. Sodium

C. Rubidium

D. Caesium

Answer: A

View Text Solution

27. Which of the following is INCORRECT with respect to a methyl cation /

A. The carbon atom in sp^2 hybridised.

B. It has a planar structure.

C. It has an unhybridised p-orbital which is perpendicular to the plane containing three C-H bonds.

D. It is more than the ethyl cation.

Answer: D

View Text Solution

28. n-Butane and 2-methylpropane are _____.

A. chain isomers

B. metamers

C. conformers

D. enantiomers

Answer: A

Watch Video Solution

Watch Video Solution

29. The rate constant of a reaction at temperature 200K is 10 times than the rate constant at 400K . What is the activation energy (E_a) of the reaction (R=gas constant) ?

A. 1842.4 R

B. 921.2 R

C. 660.6 R

D. 230.3 R

Answer: B

View Text Solution

30. The volume strength of 2.0 N H_2O_2 solution is _____.

A. 11.2 vol

B. 5.6 vol

C. 2.8 vol

D. 4.0 vol

Answer: A

Watch Video Solution

31. ethers are different form its corresponding isomeric monohydric alcohol with respect to the _____.

A. presence of oxygen

B. absence of replaceable active hydrogen

C. hybridisation of oxygen

D. number of carbon atoms present

Answer: B

Watch Video Solution

32. Which of the following is CORRECT regarding the constant external pressure (P) required to compress one mole of an ideal gas from a volume of 10 L to 1L . When the work done on the system is 225 L . Atm ?

A. P=10atm

B. $P > 100atm$

C. $P < 100atm$

D. P=100 atm

Answer: C

View Text Solution

33. Common names of aldehydes are derived from the common name of their correspondinig _____.

A. carboxylic acids

B. esters

C. amides

D. alcohols

Answer: A

Watch Video Solution

34. Hydraulic classifier is _____.

A. conical in shape

B. triangular in shape

C. cyclindrical in shape

D. rectangular in shape

Answer: A

View Text Solution

35. For the first order reaction , plot of $\log_{10}(a-x)$ against tine 't' is a straight line with slope equal to _____.

A. $-2.303K$

B. $\frac{-2.303}{K}$

C. $\left)\frac{-k}{2.303}\right.$

D. $2.303\frac{)}{K}$

Answer: C

View Text Solution

36. Which one of the following is a polysaccharide ?

A. Cane sugar

B. Starch

C. Glucose

D. Maltose

Answer: B

Watch Video Solution

37. When salicylic acid is treated with acetic anhydride, _____ is obtained .

A. aspirin

B. paracetamol

C. salol

D. benzoic acid

Answer: A

Watch Video Solution

38. The element which does NOT show $+4$ oxidation state is _____.

A. Ti

B. Tb

C. La

D. Ce

Answer: C

View Text Solution

39. The ABCABCABC type of arrangement is reffered as_____ structure.

A. octahedral close packed

B. hexagonal close packed

C. tetragonal close packed

D. cubic close packed

Answer: D

View Text Solution

40. Choose a FALSE statement about $CHCl_3$ from the following.

A. It was used as an anaesthetic in earlier days.

B. It is used as a solvent.

C. It is stored in transparent bottles.

D. If inhaled for long time, it effects CNS.

Answer: C

View Text Solution

41. Which of the following vitamins are soluble in water ?

A. A and E

B. D and E

C. B and C

D. K

Answer: C

Watch Video Solution

Watch Video Solution

42. Colloidal sulphur is obtained by the action of HNO_3 on _____.

A. H_2S

B. CaS_2

C. $Na_2S_2O_3$

D. HgS

Answer: A

View Text Solution

43. Which of the following is INCORRECT ?

A. Sandmeyer reaction involves use of copper (II) salts.

B. In Sandmeyer reaction, preferably freshly prepared diazonium salt is used.

C. Modified form of Sandmeyer reaction is called Gatterman reaction.

D. Yield in Sandmeyer reaction is better than the Gattermann reaction.+

Answer: A

View Text Solution

44. Which of the following statements is CORRECT for an ideal gas ?

A. All gas molecules move with the same velocity.

B. The compressibity factor(z) is zero.

C. At constant temperature and pressure. The amount of gas is proportional to the volume.

D. One mole of gas molecules occupies 2.24L of volume at STP.

Answer: C

Watch Video Solution

45. The oxidation state of I in HIO, HIO_4 and I_2 are _____ respectively.

A. $+1, +7, 0$

B. $+1, +4, -1$

C. $-1, +7, -1$

D. $+1, +5, 0$

Answer: A

Watch Video Solution

46. Which of the following species is paramagnetic ?

A. C_2

B. O_2

C. N_2

D. F_2

Answer: B

Watch Video Solution

47. In hydrides of group 16 elements, the order of thermal stability of hydrides is _____.

A. $H_2O > H_2S > H_2Se > H_2Te$

B. $H_2O < H_2S < H_2Se < H_2Te$

C. $H_2O > H_2S < H_2Se < H_2Te$

D. $H_2O > H_2S > H_2Se > H_2Se$

Answer: A

View Text Solution