CH 7 MODERN PERIODIC TABLE

Multiple choice questions (page 247)

1) The lanthanide are placed in the periodic table at the

a) left hand side
b) right hand side
c) middle
d) bottom

2) if the valence shell electronic configuration is ns^2np^5 the element will belong to_____

a) alkali metals
b) halogens
c) alkaline earth metals actinides
d) actinides

Q. 3) Explain the following.

^{13}Al a is metal ^{14}Si is metalloid and ^{15}P is nonmetal.(page 228)

Q. 4) Explain the following: Cu forms coloured salt while Zn form colourless salt (page 228)

Q.5) Define:
a) Screening effect (page 230)
b) Ionic radius(page 233)
c) Ionisation Enthalpy(page 235)
d) Electronegativity(page 239)

Q. 6) Give reason: noble gases possess relatively large atomic size (page 233)

CH 5:**CHEMICAL BONDING**

Q.1 MULTIPLE CHOICE QUESTIONS

1) Which molecule is linear ? (Pg 168)

(a) SO_3
(b) CO_2
(c) H_2S
(d) Cl_2O

2) The angle between two covalent bonds is minimum in_____(pg168)

(a) CH_4
(b) C_2H_2
(c) NH_3
(d) H_2O

Q 2) Predict the shape and bond angles in the following molecules: (pg 140)

(a) CF_4 (b) NF_3 (c) HCN (d) H_2S

Q 3) In case of bond formation in acetylene molecule: (pg152)

a) How many covalent bonds are formed ?
b) State number of Sigma and π- bonds formed
c) Name the type of hybridization

Q 4) State Octet rule (pg 127)

Q 5)Define:

a)Bond length (b) Bond Enthalpy (c) Hybridization

Q 6 Distinguish between Sigma and Pi bond (pg144)

Q 7) Complete the following table: (pg 153)

Molecule	Hybridization	Bond Angle
CH_4		
C_2H_4		
BeF_2		
NH_3		

CH: 4 STRUCTURE OF ATOM

Q 1 MULTIPLE CHOICE QUESTIONS(pg 121-122)

1) Principal Quantum number describes _____

(a) Shape of orbital
(b) Size of the orbital
(c) Spin of the electron
(d) Orientation of the orbital electron cloud

2) The maximum number of electrons in a subshell for which l =3 is____

(a) 14
(b) 10
(c) 8
(d) 4

Q 2 State and explain Pauli's exclusion principle (pg 110 Q 81)
Q 3 Match the Pairs: (pg 111Q 83)

Column A. Column B

1) Neutrons. .. a) six electrons

2) p- orbitals. b) -1.6×10^{-19} C

3) Charge on electron (c)Ultraviolet region

4) Lyman series (d) Chadwick

Q 4 Write the condensed orbital notation of electronic configuration of the following elements:(pg 114 Q 92)

(a) Oxygen (Z=8) (b) Silicon (Z= 14)

(c) Calcium (Z=20)

Q 5 Write the orbital notations for the electrons in orbitals with the following quantum numbers: (pg 105 Q 63)

a)n=2, l= 1 (b)n=4,l=2 (c) n=3,l=2

Ch :6 REDOX REACTIONS

MULTIPLE CHOICE QUESTIONS:(pg 213-214)

1) OXIDATION number of metal ion is always _____

(a) Positive
(b) Negative
(c) Zero
(d) Non Zero

2) Which of the following halogens does always show oxidation state -1 ?

a) F
(b) Cl
(c) Br
(d) I

3) chemical reaction in which oxidation and reduction processes takes place simultaneously is known as _____reaction

(a) Redox
(b) precipitation
(c)Complexometric
(d) titration

Q 2 Calculate the oxidation number of the underlined atoms: (pg181 Q 29)

a) $H_2\underline{S}O_4$ (b) $H\underline{N}O_3$(c) $H_3\underline{P}O_3$(d) $K_2\underline{C}2O_4$

(e)$H_2\underline{S}_4O_6$ (f)$\underline{Cr}2O7^{-2}$(g)$NaH_2\underline{P}O_4$

(h)$H_2\underline{Pt}Cl_6$ (I) $\underline{Mn}(OH)_3$(j)$Na_2\underline{C}O_3$ (k)$K_3\underline{Fe}CN_6$

Q3 Write the formulae for the following compounds:(pg 186 Q 37)

a) Mercury (II) chloride

b) Thallium (I) sulphate

c)Tin(IV) Oxide

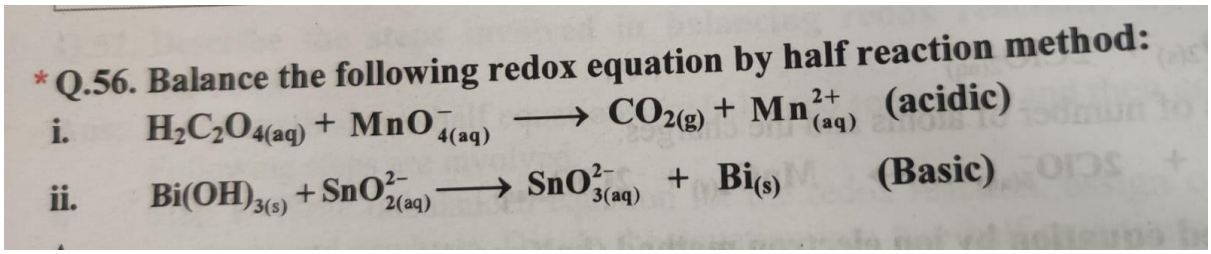
d) Chromium (III) Oxide

Q 4 Balance the following reactions by Oxidation number method:(pg193)

a) $Cr_2O_7^{-2}$+ SO_3^{-2}--------->Cr^{+3} +SO_4^{-2}(acidic)

b) H_2SO_4+ $Sn(OH)_3^-$ ------->Bi (s)+ $Sn(OH)_4^{-2}$(aq) (basic)

Q 5 Balance the following redox reaction by half reaction method:(pg202)



CH :1 SOME BASIC CONCEPTS OF CHEMISTRY

Q 1 MULTIPLE CHOICE QUESTIONS:(pg 31)

1)How many gm of H_2O are present in 0.25 mol of it?
a) 4.5
b)18
c)0.25
d)5.4

2) In the reaction N_2+ 3 H_2-------->2 N H_3, the ratio by volume of N2,H2 &NH3 is 1:3:2 This illustrates the law of _____
a) Definite proportion

b)Reciprocal proportion
c) Multiple proportion
d)Gaseous volumes

Q 2 What SI units of Time, Temperature, Electric current, Amount of Substance, (pg 4)
Q 3 Convert the following degree Celsius to degree Fahrenheit.(pg 7)
a) 40° C
b)30° C

Q 4 What is the volume of Carbon dioxide occupying by
a) 5 moles and
b) 0.5 mole of Carbon dioxide gas measured at STP.(pg 26)

Q 5 Calculate the mass of potassium chlorate required to liberate 6.72 dm^3 of oxygen at STP. Molar mass of potassium chlorate is122.5 g mol^{-1} . (pg 27)

Ch: 2 INTRODUCTION TO ANALYTICAL CHEMISTRY

Q 1 MULTIPLE CHOICE QUESTIONS

1) In Avogadro's constant 6.022×10^{23} mol-1 the number of significant figures is (pg 66)
a) 3
(b)4.
(c) 5
(d)6

2)18.238 is rounded off to four significant figures as. (pg 66)

a)18.20
(b)18.23
(c)18.2360.
(d) 18.24

3)The hydrocarbon contains 7987% carbon and 20.13% of hydrogen. What is the empirical formula ?
a) CH
b) CH_2
c) CH_3
d) C_2H_5

Q 2Explain the terms
d) Mole fraction (pg 59)
e)Molarity(pg 59)
f)Molality(pg 59)

Q 3 Explain the given quantities in exponential notations (pg 37)
a)1.230×10^4
b)0.0003498

c) 1.89×10^{-4}

Q 4 What weight of Calcium Oxide will be formed on heating 19.3 g of Calcium Carbonate?(Atomic Weight Ca= 40 ,C=12, O=16) [pg 55]
Q 5A substance, on analysis gave the following percent composition Na= 43.4% C= 11.3% O= 45.3% .Calculate the empirical formula(pg 51)

(At Wt Na=23, C=12, O=16)

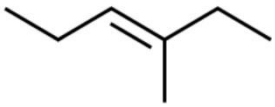
CH 14: BASIC PRINCIPLES OF ORGANIC CHEMISTRY

Q1: MULTIPLE CHOICE QUESTIONS:(pg 195-196)

1) A member of homologous series differs from immediate about or below member by_____

(a)-CH_3
(b) -CH_2-
(c)--CH_2CH_3
(d)-C_6H_5

2) The correct IUPAC name of the compound given is



a) hept-3-ene
b) 2-ethylpent-2-ene
c) hex-3-ene
d) 3-methylhex-3- ene

3) The homologus series of alcohols have general molecular formula____

a)$C_nH_{2n+1}OH$
b)$CnH_{2n+2}OH$
c)$CnH_{2n-2}OH$
d)C_nH2_nOH

4) The geometry of carbocation is_____

a)Linear
b) Planar
c)Tetrahedral
d) Octahedral

Q 2 Write the bond line formulae and condensed formulae for the following compounds:(pg 149)

1) 3- Methyloctane
2)Hept-2- ene
3)Octa-1,4-diene

Q 3 What is meant by homologous series? Write the first four member of homologous series that begins with CH_3CHO(pg158)

Q 4 A covalent bond in tertiary butyl bromide breaks in a suitable polar solvent to give ions.(pg177)

a) Name the anion produced by this breaking of a covalent bond.
b)Indicate the type of Bond breaking in this case.
c)Comment on geometry of cation formed by such a bond cleavage.

Q 5 Explain the terms:(pg 172,178)
a) Electrophile b) Nucleophile

Q 6 Distinguish between :

a) Homolysis and Heterolysis
b) Carbocation and Carbanion
c) Inductive effect and Resonance effect

Q 7 An electronic displacement in a covalent bond is represented by the following notation. (pg 181)

$+\delta.$ $+\delta.$ $-\delta$
CH_3----$>$--CH_2---$>$--Cl

A) Identify the effect
B) Is the displacement of electrons in a covalent bond temporary or permanent.