



UNIVERSITY OF UYO, UYO
POST-UME SCREENING EXERCISE 2006/2007 SESSION
CHEMISTRY 2006/2007

INSTRUCTION: From the options lettered A-D, pick the correct answer and shade accordingly

1. A compound contains 31.91% potassium, 23.93% chlorine and the rest oxygen. What is the chemical formula of the compound? (A) KClO_4 (B) KClO (C) KClO_2 (D) KClO (k=39, Cl =35.5, O=16).
2. The chromatographic separation of ink is based on the ability of the component to: (A) react with the solvent (B) React with each other (C) dissolve each other in the column (D) move at different speed in the column
3. Which of the following gases contains the least number of atoms at S.T.P? (A) 1 mole of butane (B) 3 moles of ozone (C) 4 Moles of Chlorine (D) 7 moles of argon
4. What amount of mercury would be liberated if the same quantity of electricity that liberate 0.65g of zinc is applied? (A) 2.01g (B) 1.00g (C) 4.02g (D) 8.04g (Zn = 65, Hg =201)
5. When dissolved in water NaOH flakes shows A. An endothermic change (B) an exothermic change (C) a slow reaction (D) a rapid reaction
6. The product of the electrolysis of dilute sodium hydroxide using platinum electrodes are A. hydrogen and oxygen gases (B) water and hydrogen gases (C) water and sodium metal (D) sodium metal and hydrogen gas
7. Tetraoxosulphate(vi) acid burns the skin by (A) hydrolysis (B) Hydration (C) heating (D) dehydration .
8. 25cm³ of a 0.2 moldm⁻³ solution of Na_2CO_3 requires 20cm³ of a solution of HCL for neutralization. The concentration of HCL solution is (A) 0.5 moldm⁻³ (B) 0.6 moldm⁻³ (C) 0.2 moldm⁻³ (D) 0.4 moldm⁻³
9. The property which makes alcohol soluble in water is the: (A) boiling point (B) hydrogen bonding (C) ionic character (D) covalent nature
10. The gas that gives brown coloration in brown ring test is (A) NO (B) CO_2 (C) NO_2 (D) CO
11. A change in the temperature of saturated solution disturbs the equilibrium between the (A) solvent and the undissolved solute (B) dissolved solute and the solution (C) dissolved solute and the solvent (D) dissolve solute and the undissolved solute
12. A liquid that will dissolve fat is (A) kerosene (B) hydrochloric acid (C) water (D) calcium hydroxide

13. A consequence of global warming is (A) increased humidity (B) flooding (C) water pollution (D) Air pollution
14. when 10g of sodium hydroxide dissolved in 1000cm³ of water, the solution formed is approximately (A) 0.50 moldm⁻³ (B) 0.01 moldm⁻³ (C) 0.10 moldm⁻³ (D) 0.25 moldm⁻³ (Na=23. H=10=16)
15. Which of the following can electrolyte? (A) Mercury (B) alcohol (C) sodium acetate solution (D) solid potassium hydroxide
16. Which of the following is found in cotton? (A) fat (B) starch (C) of (D) cellulose
17. The process by which atoms are rearranged into different molecular structures in the petroleum refining process is referred to as (A) Polymerization (B) reforming (C) hydrocracking (D) catalytic cracking
18. The type of reaction that is peculiar to benzene is (A) Hydrolysis (B) addition C. Substitution (D) Polymerization
19. Carbohydrates are compounds containing carbon, hydrogen and oxygen in the ratio: (A) 1:1:1 (B) 1:2:1 (C) 2:1:1 (D) 3:1:1
20. A compound containing 40% carbon, 6.7% hydrogen and 53.3% oxygen. If the molar mass of the compound is 180, find the molecular formula (A) C₆H₆O₃ (B) C₆H₁₂O₆ (C) C₃H₆O₃ (D) CH₂O
21. If sulphur (IV) oxide and methane are released simultaneously at the opposite ends of a narrow tube, the rates of diffusion R_{SO₂}, and R_{CH₄} will be in the ratio: (A) 4:1 (B) 2:1 (C) 1:12 (D) 1:4 (S=32, O = 16, H =1).
22. The soil around a battery manufacturing factory is likely to contain a high concentration of (A) Ca²⁺ salts (B) Pb²⁺ salts (C) Mg²⁺ salts (D) Al³⁺ salts
23. The pH of a solution obtained by mixing 100cm³ of a 0.1M HCl solution with 100cm³ of a 0.2M solution of NaOH is: (A) 1.3 (B) 7.0 (C) 9.7 (D) 12.7
24. What mass of gold is deposited during the electrolysis of gold (III) tetraoxosulphate (VI) when current of 15 A is passed for 193 seconds? (A) 1.97g (B) 3.94g (C) 5.91g (D) 19.70g (Au = 197, F =96500C)
25. A common characteristic shared by iron and aluminum is that both (A) are extracted by electrolysis (B) form only basic oxides (C) show oxidation states of +2 and +3 (D) form soluble hydroxide.

ANSWERS TO UNIUYO PUME CHEMISTRY 06/07 SESSION

1A 2C 3D 4A 5B 6A 7B C9 10A 11C 12C 13B 14B 16D 17D 18C 19 B 20B 21A 22B
23 B 24 25A



UNIVERSITY OF UYO, UYO
POST-UME SCREENING EXERCISE 2007/2008 SESSION
CHEMISTRY 2007/2008

INSTRUCTION: From the options lettered A-D, pick the correct answer and shade accordingly

1. Elements X and Y have electronic configurations $1s^2 2s^2 2p^4$ and $1s^2 2s^2 2p^6 3s^2$ when they combine; formula of the compound formed is (A) XY (B) X_2Y_4 (C) XY_2 (D) YX.
2. The atomic number of an element is 55 and its atomic mass is 133. the nucleus of the atom therefore contains (A) 78 protons and 55 neutrons (B) 55 protons and 78 neutrons (C) 55 protons and 78 electrons (D) 78 protons and 55 neutrons
3. Which of the following would support the conclusion that a solid sample is a mixture (A) The Solid can be ground to a fine powder (B) The density of the solid is 2.25g/dm³ (C) the solid has a melting point range of 3000C TO 3750C (D) the solid is hygroscopic.
4. What is the partial pressure of hydrogen gas collected over water at standard atmospheric and 250C if the saturation vapour pressure of water is 23mmHg at that temperature? (A) 737mmHg (B) 763mmHg (C) 777 mmHg (D) 783mmHg.
5. The mole ratio of carbon and hydrogen of a volatile liquid compound is 1:2.0.12g of the liquid on evaporation at s.t.p gave 32cm³ of vapour. The molecular formula of the liquid is (A) C₃H₈ (B) C₄H₈ (C) C₅H₁₀ (D) C₆H₁₂ [GMV = 22.4DM³].
6. Carbon exists naturally in the combined state as (A) diamond (B) coal (C) wood (D) graphite
7. The sulphide which is insoluble in dil. HCl is (A) CuS (B) Na₂S (c) FeS (D) ZnS .
8. In the industrial production of H₂ from natural gas, CO₂ produced along with the H₂ is removed by (A) passing mixture into lime water (B) washing under pressure (C) drying over P₂O₅ (D) Using Ammonical Cu₂Cl
9. Which of the following typically represent a photochemical reaction? (a) Conversion of N₂O₄ to NO₂ (B) conversion of Ag halides to metallic Ag (C) decomposition of Ca(OH)₂ to its oxide (D) formation of H₂O from H₂ and O₂ molecules.
10. One mole of a hydrocarbon contains 36g of carbon and its vapour density is (A) CH₃CH₂CH₃ (B) CH₃CH=CH₂ (C) CH₃CH₂C≡CH (D) CH₃C≡CH

11. Nigerian crude oil is described as light because of its (A) low aliphatic-hydrocarbon content (B) low sulphur content (D) high natural gas content (D) high octane number.
12. Detergent are manufactured with straight hydrocarbon chains so as to make them (A) soluble (B) cheaper (C) non-biodegradable (D) biodegradable
13. $5\text{CH}_3-4\text{CH}_2-3\text{CH}-\text{C} \equiv \text{CH}-\text{CH}_3$
- In the structure above carbon two and three are respectively (A) sp^2 and sp^3 -hybridized (B) 20 and 10 (C) sp^3 hybridized and 30 (D) sp -hybridized and 30
14. A solution of calcium bromide contains 20dm^3 . What is the molarity of the solution with respect to calcium bromide and bromide ions? (A) 0.1 (B) 0.1,0.2 (C) 0.1,0.05 (D) .005,0.1
15. A quantity of electricity liberates 7.2g of Ag from its salt what mass of Al will be liberated from salt by the.
16. In spite of the electronic configuration of carbon of $1s^2 2s^2 2p^2$ the atom is tetravalent because (A) the electrons in both 2s and 2p orbital have equal energy (B) the orbital in both 2s and 2p are equivalent (C) Both the 2s and 2p orbitals have equal energy (D) the six orbital hybridize to form four.
17. Alloys are best prepped by (A) High temperature during welding of the metals (B) electrolysis using the major metallic component as cathode (C) reducing a mixture of anode of the element (D) cooling a molten mixture of the necessary element
18. In the periodic table which is the property that decreases along the periods and increase down the period and increases down the groups? (A) atomic number (B) electron affinity (C) location patent (D) atomic reactivity.
19. If the rate law obtained for a given reaction rate $K[\text{X}]^n [\text{Y}]^m$, the overall order is (A) nm (B) n/m (C) $n+m$ (D) $n-m$
20. What happens when the nitrates of potassium, zinc and copper are separately heated? (A) all the nitrates will decompose to their respective metals (B) the nitrates of calcium and potassium will decompose to their nitrates (C) only copper nitrate decomposes to the metal (D) the nitrate of calcium, zinc and copper decompose to their oxides.
21. The scale formation in a kettle is caused by the presence in water of (A) calcium sulphate (B) calcium carbonate (C) calcium hydrogen carbonate (D) calcium hydroxides.
22. An efflorescent compound is a substance that (A) absorbs water from air without dissolving in it (B) is capable of giving off coloured luminosity (C) gives out water from the air and dissolves.
23. Which of the following bonds exist in crystalline ammonium chloride (NH_4Cl)? (A) ionic and covalent (B) ionic and co-ordinate (C) ionic, covalent and co-ordinate (D) covalent, co-ordinate and metallic

24. Which of the following is a neutralization reaction? Addition of (A) nitric acid to hydrochloride acid (b) nitric acid to sulphate acid (c) Nitric acid to distilled water (D) nitric acid to sodium hydroxide
25. In preparation of carbon monoxide by heating ethanedoic with concentrated sulphuric acid, act as (A) an oxidizing agent (b) reducing agent (C) a dehydrating agent (D) reaction medium.

ANSWERS TO UNIUYO PUME CHEMISTRY 07/08 SESSION

1C 2C 3C 4C 5C 6D 7D 8D 9D 10A 11A 12A 13A 14A 15 16B 17C 18D 19C 20D
21B 22C 23C 24D 25C



UNIVERSITY OF UYO, UYO

POST-UME SCREENING EXERCISE 2008/2009 SESSION

CHEMISTRY 2008/2009

INSTRUCTION: From the options lettered A-D, pick the correct answer and shade accordingly

1. Matter is defined by which of the following? (A) mass and weight (B) volume and occupies space (C) mass and temperature (D) mass and occupies spaces
2. Which of the following units would not be used in expressing density? (A) g⁴ (B) g/cm² (C) g/m (D) g/cm
3. Candle wax melting units is an example of which of the following? (A) physical property (B) Chemical property (C) Physical change (D) Chemical change
4. What is the amount of energy given out when an atom or ion gains an extra electron? (A) electron energy (B) Electron infinity (C) Atomic energy (D). Energy of addition
5. Which of the following is false regarding the reactants of a chemical reaction? (A) Are Always on the left side of the chemical duration (B) They are the substances obtained (C) A plus sign to is used to separate one from the other (D) Are substances that interact with the other
6. Which of the following is a substance that absorbs water from the air to the point where it becomes a solution? (A) Efflorescent substance (B) Hygroscopic substance (C) Effervescent substance (D) Deliquescent substance.

7. Which of the following does not affect solubility? A. nature of the solvent (B) Particle size (C) Nature of the solute (D) Temperature
8. Which of the following is false concerning an oxidizing agent? (A) A substance that is reduced (B) a substance that is oxidized (C) A substance that loses electrons (D) The reactants
9. The particle easiest remove from an atom is the (A) electron (B) Proton (C) Neutron (D) Nucleus
10. A saturated solution contains: (A) only ions (B) only non-polar molecules (C) the maximum concentration of solute that it can hold (D) the maximum concentration of solvent
11. The isomers of a compound have different (A) Molecular compositions (B) masses (C) structures (D) Numbers of bonds between their atoms.
12. Amino acids are the basis units of (A) Carbohydrates (B) Protein (C) Lipids (D) Nucleic acids
13. The number of atoms in one mole of a substance is equal to (A) the atomic number (B) the Avogadro Number (C) The gas constant (D) The number of neutrons
14. Which of the following statement is NOT true of electrovalent compounds? (A) they are solids (B) they do not vaporize easily (C) They usually dissolve in water (D) The elements forming the compounds normally have their valency electrons in a shaped state
15. If concentrated sulphuric acid is added to sugar and warmed gently, the sugar changes from white to brown and finally to a black mass of carbon. In this reaction concentrated sulphuric acid is acting as: (A) a drying agent (B) an oxidizing agent (C) a dehydrating agent (D) a reducing agent
16. Which of the following can have isomers? (A) C₂H₄ (B) C₄H₆ (C) C₄H₃ (D) C₂H₆O
17. A polymerization reaction is one in which (A) small molecules form giant molecules (B) atoms form molecules (C) giant molecules form small molecules (D) Molecules form volatile compounds
18. 28.8cm³ of nitrogen at 150C is cooled to 00C at constant pressure. The new volume of nitrogen is (A) 147cm³ (B) 14.7cm³ (C) 27cm³ (D) 31.7cm³ (D) 34.7cm³
19. The electron configuration of elements X and Y are = 2,8,6, Y = 12,8,7. The bond in the compound formed of X and Y is expected to be A. Ionic (B) covalent (C) Dative covalent (D) Metallic
20. Pure sulphuric acid is a liquid of 34 density. What volume of it would be required to prepared 250cm³ of 0.2M solution? H =1 S=32, O=16 (A) 2.00cm³ (B) 2.666cm³ (C) 3.00cm³ (D) 3.6cm³

21. What mass of sodium carbonate is 500cm³ of 0.1 mole of sodium carbonate solution (Na=23, C=12, O=16) (A) 106g (B) 59g (C) 99g (D) 10g (E) 20g
22. Which of the following metal is not normally extracted by chemical because of its position in the electrochemical series? (A) Cooper (B) Iron (C) Lead (D) Potassium
23. If 1 mole of aluminum contains 6×10^{22} atoms of aluminum, how many atoms are contained in 0.9g of Aluminum? (A₁ =27) (A) 1.0×10^{21} (B) 6.6×10^{21} (C) 2.0×10^{22} (D) 0.6×10^{23}
24. If an organic compound decolourizes bromine water then the compound is (A) saturated (B) supersaturated (C) unsaturated (D) a solid
25. Fats and oil are (A) Addition of long-chain fatty acids and alkali (B) Addition products of long chain fatty acids and glycerol (C) Concentration products of long-chain fatty acids and glycerol (D) Condensation products of formaldehyde and glycerol

ANSWERS TO UNIUYO PUME CHEMISTRY 08/09 SESSION

1D 2A 3C 4C 5B 6B 7B 8B 9A 10C 11C 12B 13A 14 15 16C 17. 18 .19. 20. 21. 23. 24. 25



UNIVERSITY OF UYO, UYO
POST-UTME SCREENING EXERCISE 2009/2010 SESSION
CHEMISTRY 2009/2010

1. $\text{PCl}_5(\text{g}) \rightarrow \text{PCl}_3(\text{g}) + \text{Cl}_2(\text{g})$, In the reaction above, a decrease in pressure will (A) Increase the yield of PCl_3 (B) Increase the yield of Cl_2 (C) Accelerate the reaction (D) Decelerate the reaction.
2. What volume of 0.5 mol/dm³ H_2SO_4 will exactly neutralize 20cm³ of 0.1 moldm³ NaOH solution? A. 5.0cm³ (B) 6.8cm³ (C) 8.3cm³ (D) 2.0cm³
3. A compound contains 40% carbon, 6.7% hydrogen and 54.3% oxygen. If the molar mass of the compound is 180; find the molecular formula. (H =1, C =12; O = 16)
(A) CH_2O (B) $\text{C}_3\text{H}_6\text{O}_3$ (C) $\text{C}_6\text{H}_{12}\text{O}_6$ (D) $\text{C}_6\text{H}_{12}\text{O}_3$

4. 0.9dm^3 of a gas at s.t.p was subjected by means a moveable piston to two times the original pressure with the temperature being now kept at 364k . When is the volume of the gas in dm^3 at this pressure? (A) 2.0 (B) 4.5 (C) 6.0 (D) 8.3
5. If 24.83cm^3 of 0.15M NaOH is titrated to its end point with 39.45cm^3 , of HCl what is the morality of the HCl? (A) 0.094M (b) 0.150M (C) 0.940M (D) 1.500M
6. Which of the following compound is covalent? (A) CaO (B) C_2H_6 (C) MgCl_2 (D) Na_2O
7. How many coulombs of electricity are passed through a solution in which 6.5A are allowed is run for 1.0hours (A) $-3.90 \times 10^2\text{C}$ (B) $5.50 \times 10^3\text{C}$ (C) $6.54 \times 10^3\text{C}$ (D) $2.34 \times 10^4\text{C}$
8. Complete oxidation of propan-1-ol gives (A) propanol (B) Propan -2-ol (C) Propanic acid (D) Propanal
9. How many electrons are present in the 3P orbital of an element represented as 3717M . (A) 1 (B) 2 (C) 3 (D) 4 (E) 5
10. A gas responsible for most of the fatal explosion in coal mines is (A) Butane (B) Ethene (C) Ethane (D) Methane
11. What is the percentage by mass of copper in copper (i) oxide (A) 40.0 (B) 50.0 (C) 69.6 (D) 80.0 (E) 88.9
12. How many moles of oxygen are required to burn one mole of C_6H_{12} completely? (A) 5 (B) 6 (C) 7 (D) 8 (E) 9
13. The maximum number of electrons that can be accommodated in the shell having the principal quantum number 3 is (A) 3 (B) 6 (C) 9 (D) 18 (E) 32
14. $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$. In the equation above, what mass in gram of sodium is required to produce, 0.40g of sodium hydroxide? ($\text{H} = 1, \text{O} = 16, \text{Na} = 23$). (A) 0.12 (B) 0.23 (C) 46 (D) 2.30 (E) 4.60
15. The number of hydrogen ions in 5.3g of trioxonitrate (v) acid is ($\text{H} = 1, \text{N} = 14, \text{O} = 16$), (Avogadro's No = 6.02×10^{23}). (A) 6.02×10^{23} (B) 6.02×10^{22} (C) 6.02×10^{24} (D) 16.02×10^{25}
16. Alkanes react with halogens mainly by (A) Oxidation (B) Polymerization (c) Addition (D) Substitution
17. Equals volumes of CO and CO_2 at stp have the same (A) Mass (B) Density (C) Rate of diffusion (D) Number of molecules
18. The electronic configuration $1\text{s}^2 2\text{s}^2 2\text{p}^6 3\text{s}^2 3\text{p}^6$ is that of a (A) Noble gas (B) Group (II) element (C) Group (III) element (D) Group (V) element (E) Group (VI) element
19. Which of the following is biodegradable? (A) Sewage (B) plastics (C) Metal scraps

20. Hydrogen is used for the following except? (A) manufacturing of ammonia (B) Synthesis of hydrochloric acid (C) Conversion of coal to petrol (D) Extinguishing fire (E) Manufacture of margarine
21. How many mole of AgNO_3 are there in 500cm^3 of 0.01M AgNO_3 solution? (A) 0.005 mole (B) 0.05Mole (C) 0.5mole (D) 1mole (E) 5 moles.
22. What is emitted during the disintegrations of barium nucleus as shown by the equation below ${}_{56}^{138}\text{Ba} \rightarrow {}_{54}^{134}\text{Xe} + {}_2^4\text{He}$
(A) Alpha particles (B) Beta particles (C) Gamma (D) Neutrons (E) X-rays
23. To what temperature must a gas be raised from 273K in order to double both its volume and pressure (A) 298K (B) 300K (C) 546K (D) 819K (E) 1092K
24. Which of following is not a direct petroleum product? (A) Methane (B) Ethanol
25. A solid that absorbs water from the atmosphere and forms an aqueous solution is (A) Hydrophilic (B) Efflorescent (C) Deliquescent (D) Hygroscopic

ANSWERS TO CHEM 2009/2010

- 1.D 2.C 3.C. 4.B 5.D 6.D 7.C 8.D 9.C 10.A 11.A 12.D 13.D 14.A 15. 16.C 17.D 18.A 19.A 20.D 21.B 22.A 23.C 24.B 25.D



UNIVERSITY OF UYO, UYO
POST-UTME SCREENING EXERCISE 2010/2011 SESSION
CHEMISTRY 2010/2011

INSTRUCTIONS: From the options lettered A-D, pick the correct answers and shade according

1. Which of the following substances is not a homogenous mixture? (A) filtered water (B) soft drink (C) flood water (D) writing ink
2. A given mass of gas occupies 2cm^2 at 300K . At what temperature will its volume be doubled keeping its pressure constant? (A) 400K (B) 480K (C) 550K (d) 600K
3. Which of the following is a measure of average kinetic energy of the molecules of a substance? (A) Volume (B) Mass (C) pressure (D) temperature
4. An increase in temperature causes an increase in the pressure of gas in a fixed volume due to an increase in (A) No of molecules of the gas (B) Density of

- the gas molecules (B) No. of the collision between the gas molecules (D) No. of the collision between the gas molecules and the walls of the container
5. How many lone pairs of electrons are there on the centre atom of the H-O molecules (A) 1 (B) 2 (C) 3 (D) 4
6. Four element P,Q, R and S, have 1, 2, 3, and 7 electrons in their outermost shells respectively. The element which is unlikely to be a metal is (A) P (B) Q (C) R (D) S
7. The pollutants that are likely to be present in an industrial environment are: (A) H₂S, SO₂, and oxides of nitrogen (B) carbon (II) oxide (C) Nitrogen (D) sulphur (iv) oxide
8. An emulsion paint consist of (A) gas and liquid particles dispersed in liquid (B) Liquid particles dispersed in liquid (C) solid particles dispersed in liquid (D) Solid particles dispersed in solid
9. A Sample of orange juice was found to have a pH of 3.80. What is the concentration of hydroxide ion in the juice? (A) 1.6x10⁴ (B) 6.1x10¹¹ (C) 6.1x10⁴ (D) 1.6x 10¹¹
10. Copper (II) tetraoxosulphate(VI) solution is electrolyzed using carbon electrodes. which of the following are produced at the anode and cathode respectively (A) Copper and oxygen (B) Oxygen and copper (C) Hydrogen and copper (D) cooper and Hydrogen
11. Which of the following combination is used for metal welding? i. Oxygen and Ethyne ii. Hydrogen and Ethyne iii. Hydrogen and Oxygen iv. Ethyne, Hydrogen and Oxygen (A) i and ii (B)iii and iv (C) i and iii (D) ii and iv
12. A gas formed when ammonium trioxonitrate(v) is heated with sodium hydroxide (A) Hydrogen and oxygen (B) Nitrogen (IV) oxide (C) Ammonia (D) Oxygen
13. Which of the following are isomers (A) Ethanol and dimethyl ether (B) Benzene and methylbenzene (C) Ethanol and propanone (D) Trichloromethane and tetrachloromethane
14. The characteristic reaction of carbonyl compound is (A) Substitution (B) Elimination (C) Addition (D) Specification
15. A balanced chemical obeys the laws of (A) Conservation of mass (B) Definite proportion (C) Multiple proportion (D) conservation of energy
16. For toluene crystals to sublime on heating, the molecules must acquire energy that is (A) Less than the forces of attraction on the solid (B) equal to the forces of attraction on the solid (C) necessary to melt the solid (D) Greater than the forces of attraction on both the solid and the liquid phase.
17. Two atoms represented as ²¹⁵98U and ²⁰⁸98 U are: (A) Isomers (B) Allotropes (C) Isotopes (D) Anomers

18. As the difference in electro-negativity between bonded increases polarity of the bond (A) decreases (B) increases (C) Remains unchanged (D) reduces to zero
19. A student prepared 0.5M solution each of hydrochloric and ethanoic acid and then measured their pH. The result will show that the (A) pH values are equal (B) HCL solution has the higher PH (C) sum of the pH values is 0.1 (D) Ethanol acid has a higher PH.
20. When platinum electrodes are used during the electrolysis of copper (II) tetraoxosulphate (VI) solution. The solution becomes (A) Acidic (B) Basic (C) Neutral (D) Amphoteric
21. What is the oxidation number of Zinc in K_2ZnCl_6 ? (A) -3 (B) +3 (C) -6 (D) +6
22. One method of driving the position of equilibrium of an endothermic reaction forward is to (A) Increase temperature (B) increase volume (C) Cool down the apparatus (D) decrease temperature at constant pressure
23. Oxidation of concentrated hydrochloric acid with manganese (IV) oxide liberates a gas used in the (A) manufacture of tooth paste (B) treatment of simple goiter (C) Vulcanization of rubber (D) Sterilization of water
24. Sodium hydroxide is prepared commercially from sodium chloride solution by (A) Hydrolysis (B) Hydrolysis in steam using a catalyst (C) Electrolysis using iron as anode (D) Treatment of sodium chloride with ammonia and carbon (iv) oxide
25. An undesirable fraction in the petroleum industry which is particularly prone to knocking is (A) iso-octane (B) n-heptane (C) iso-heptane (D) n-octane

ANSWERS TO UNIUYO PUME CHEMISTRY 10/11 SESSION

1C 2D 3D 4D 5. 6. 7A 8B 9. 10. 11. 12. 13. 14. 15. 16D 17C 18. 19. 20. 21B 22A
23. 24. 25



UNIVERSITY OF UYO, UYO

**POST-UTME SCREENING EXERCISE (1ST CHOICE) 2011/2012 SESSION
CHEMISTRY 2011/2012**

1. Chromatography is used to separate compound of mixtures which differ in their rates of: (A) diffusion (B) Migration (C) reaction (D) sedimentation

2. Which of the following is an example of a chemical change? (A) Dissolution of salt in water (B) Rusting of iron (C) Melting of ice (D) Separating a mixture by distillation

Use the section of the periodic table below to answer questions 9 and 10

1							2L
3G	M	5	6	7	8d	9E	
11	X	13K	14	15	16T	17	18

3. Which of the letters indicate an alkali metal and a noble gas respectively, (A) M and E (B) G and E (C) R and E (D) G and L

4. Which letter represents a non-metal that is a solid at room temperature? (A) T (B) R (C) J (D) X

5. Which of the following statements is FALSE about isotopes of the same element? (A) They have the same number of electrons in their outmost shells (B) they have different atomic masses (C) They have the same atomic number and the same number of electrons (D) They have the same atomic number but different number of electrons.

6. Helium is often used in observation balloons because it is (A) light and combustible (B) light and non-combustible (C) heavy and combustible (D) heavy and non-combustible.

7. Neutralization involves a reaction between H_3O^+ and (A) Cl^- (B) OH^- (C) NO_3^- (D) CO_3^{2-}

8. Which of the following processes leads to increase in entropy? (A) Mixing a sample of NaCl and sand (B) Condensation of water vapour (C) Boiling a sample of water (D) Cooling a saturated solution.

9. Sulphur exists in six forms in the solid state. This property is known as: (A) Isomerism (B) allotropy (C) Isotopy (D) isomorphism.

10. Which of the following compounds will impart a brick-red colour to a non-luminous Bunsen Flame? A. NaCl (B) NCl (C) $CaCl_2$ (D) $MgCl_2$

11. Which of the following types of bonding does not involve the formation of new substances? (A) Metallic (B) Covalent (C) Co-ordinate (D) Electrovalent

12. The knowledge of half-life can be used to: (A) create an element (B) detect an element (C) split an element (D) irradiate an element

13. The noble gas, argon, is used for (A) Electric arc welding (B) welding brass (C) underwater welding (D) steel welding.

14. Hydration of ions in solutions is associated with (A) absorption of heat (B) Reduction of heat (C) Conduction of heat (D) liberation of heat

17. The least easily oxidized of the metals below is (A) Ca (B) Na (C) Zn (D) Al

18. The reaction of carbide with water gives (A) ethane (B) ethane (C) ethane (D) ethanal
19. Alkanones are generally obtained by the oxidation of (A) primary alkanols (B) secondary alkanols (C) tertiary alkanols (D) alkanolic acid.
20. Sucrose is made up of: (A) glucose and glucose (B) glucose and fructose (C) Fructose and fructose (D) galactose and glucose
21. Calcium atom ionizes by (A) gaining two electrons (B) losing two electrons (C) sharing two electrons (D) gaining two protons
- 22 . Which of the following halogens is the most reactive? A. F₂ (B) Br₂ (C) I₂ (D) Cl₂
23. Exhaust fumes discharged from a smoke vehicle gradually become invisible as a result of (A) Diffusion (B) combustion (C) absorption (D) emission
24. An exothermic reaction is one which involves (A) attainment of dynamic equilibrium (B) loss of heat to the surrounding (C) evolution of gas as it proceeds (D) positive change in value of enthalpy.

Body Fluid	pH value
Gastric juice	1.6 - 1.8
Bile	7.8 – 8.6
Urine	5.5 – 7.0

25. Use the data above to arrange the body fluids mentioned in order of increasing acidity. (A) Bile < gastric juice < urine (B) Gastric juice < urine < Bile (C) Bile < urine < Gastric juice (D) urine < bile < gastric juice.

ANSWERS TO UNIUYO PUME CHEMISTRY 11/12 SESSION

1B 2B 3D 4A 5C 6 7A 8D 9A 10D 11C 12C 13C 14D 15 16 17B 18A 19B 20B 21B 22A 23A 24B 25B N/b. No. 15 and 16 were bonus questions