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FBQ An undergraduate weighed out 20grams of sodium hydroxide pellets. If Na =23, O = 16 andH = 1, What is the mole of this sodium hydroxide.

0.25mole

FBQ The base unit of a measured liquid called volume is

Cubic meter

\_.

FBQ The base unit of a measured or weighed solid material in chemistry is

Kilogram

\_.

FBQ The technique of separation employed to purify an organic solid that may be contaminated by impurities is called

Recrystallization

\_.

FBQ The technique employed for the separation of colours is called

Chromatography

FBQ The separation technique employed to separate mixtures of two or more liquids with slightly different boiling points is called

Fractional distillation

\_.

FBQ The condensate collected during the vaporization of liquid is called

Distillate

FBQ An apparatus that can be used to remove traces of water from a substance is

Dessicator



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|  | FBQ | The process by which traces of water is removed by treating the liquid with suitable drying agents is called  \_. | Dehydration |  |  | |  |  |
|  | FBQ | The separation technique employed to purify an organic liquid or to separate mixtures of liquids of different volatilities or boiling points is called  \_. | Distillation |  |  | |  |  |
|  | FBQ | A separation technique that is used to isolate a desired solid from a solid -liquid mixture or for freeing a desired liquid of solid impurities is called | Filtration |  |  | |  |  |
|  | FBQ | The reagent that will not make any significant contribution to the theoretical yield is  \_. | Limiting reagent |  |  | |  |  |
|  | FBQ | A high percentage yield implies that  \_. | successful reaction |  |  | |  |  |
|  | FBQ | The reagent with a stoichiometric amount (in moles) that limits the amount of desired product (in moles ) formed is called | Limiting reagent |  |  | |  |  |
|  | FBQ | The actual yield of product (in g or moles) expressed as a percentage of the theoretical yield (in g or moles ) is called  \_. | Percentage yield |  |  | |  |  |
|  | FBQ | The number of protons or electrons in the atom of an element is equal to the  of the element. | Atomic number |  |  | |  |  |
|  | FBQ | Calculate the [OH^{-}] of an aqueous solution of Ph=11 | $$1× 1o^{-3}M$$ |  |  | |  |  |
|  | FBQ | An acid HA has a pka of 4.5, what is the Ka value? | $$3.2 × 10^{-5}$$ |  |  | |  |  |
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|  | FBQ | An acid HA has a pka of  4.5. What is the concentration of  $$H\_{3}^{+} $$ in 0.110M solution of the acid ? | $$1.876 × 10^{-3}$$ |  |  | |  |  |
|  | FBQ | Calculate the $$[H^{+}]  $$of an aqueous solution wity $$[OH^{-}] of 1× 10^{-10}M$$. What is the pH of the solution? Is the solution acidic or basic? | 4 |  |  | |  |  |
|  | FBQ | When two or more elements combine chemically in fixed proportion by mass,  is formed | Compounds |  |  | |  |  |
|  | FBQ | A mixture in which the components are evenly distributed and the composition is uniform throughout the mixture is called  mixture. | Homogeneous |  |  | |  |  |
|  | FBQ | Dissolution 0f sodium chloride in water results in  type of mixture | Homogeneous |  |  | |  |  |
|  | FBQ | The types of mixtures are  \_,  \_--- mixture. | Homogeneous, Heterogeneous |  |  | |  |  |
|  | FBQ | Convert 2 moles of NaOH to grams of NaOH. Answer is  \_. | 80g |  |  | |  |  |
|  | FBQ | The molar mass of  $$Na\_{2}CO\_{3}$$ | 106g |  |  | |  |  |
|  | FBQ | When propane reacts with oxygen, the products are  and | carbon dioxide, water. |  |  | |  |  |
|  | FBQ | Convert 500g of $$ Na\_{2}CO\_{3}$$ to moles | 4.717mol |  |  | |  |  |
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|  | FBQ | A compound in grams is converted to moles by diving by  \_. | Molar mass |  |  | |  |  |
|  | FBQ | The smallest unitof a compound that manifest all the chemical properties of the compound is called  \_. | Molecule |  |  | |  |  |
|  | FBQ | A mixture in which the components are not evenly distributed and the composition is not uniform is called  mixture. | Heterogeneous |  |  | |  |  |
|  | FBQ | Mixtures with particle sizes between 2 to 1000 nanometre are called  \_. | colloids |  |  | |  |  |
|  | FBQ | The label on a stock bottle of acid reads : 56% by mass and 1.25 specific gravity. If the molar mass of the acid is 56, what is the the concentration in grams per dm\_{3} | 700g |  |  | |  |  |
|  | FBQ | Mixtures with particle sizes greater than 1000 nanometres are called  \_. | Suspensions |  |  | |  |  |
|  | FBQ | Mixture made up of sand and iron filing is a type of  mixture | Heterogeneous |  |  | |  |  |
|  | FBQ | The formula for sodium carbonate is  \_. | $$Na\_{2}CO\_{3}$$ |  |  | |  |  |
|  | FBQ | The formula for caustic soda is  \_. | NaOH |  |  | |  |  |
|  | FBQ | In balancing this equation  $$Na\_{2}CO\_{3}—› ?  NaOH + CaCO\_{3}$$ . ? is  \_. | 2 |  |  | |  |  |
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|  | FBQ | In a solution , the component in smaller amount is called  \_. | solute |  |  | |  |  |
|  | FBQ | In a solution, the component in larger amount is called  . | solvent |  |  | |  |  |
|  | FBQ | A substance that is made up of two or more substances which are not chemically combined is called  \_. | Mixture |  |  | |  |  |
|  | FBQ | Calculate the percentage by mass of Hydrogen in  $$NH\_{3}$$ | 0.1775 |  |  | |  |  |
|  | FBQ | Calculate the percentage by mass of Nitrogen in  $$NH\_{3}$$ | 0.8225 |  |  | |  |  |
|  | FBQ | 0.0055 has  significant figure(s) | 2 |  |  | |  |  |
|  | FBQ | The amount of product obtained from an experiment is called  \_. | actual yield |  |  | |  |  |
|  | FBQ | The amount of product expected from given amounts of starting materials is called  \_. | Theoretical yield |  |  | |  |  |
|  | FBQ | In a chemical reaction, the balanced chemical equation which shows the quantitative relationship between masses of reactants and products is known as  \_. | Stoichiometry of the reaction |  |  | |  |  |
|  | FBQ | The amount of energy required to break a particular bond is called  \_. | Bond dissociation energy |  |  | |  |  |
|  | FBQ | 12.25mL has  significant figure(s) | 4 |  |  | |  |  |
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|  | FBQ | Calculate the percentage by mass of Oxygen in  $$CH\_{3}OH$$ | 0.4995 |  |  | |  |  |
|  | FBQ | Calculate the percentage by mass of Hydrogen in  $$CH\_{3}OH$$ | 0.1259 |  |  | |  |  |
|  | FBQ | Calculate the percentage by mass of carbonIin  $$CH\_{3}OH$$ | 0.3746 |  |  | |  |  |
|  | FBQ | An organic compound was found by analysis to contain 42.90% carbon, 2.40%  Hydrogen , 16.70% Nitrogen and 38.0% of oxygen. Calculateits empirical formular. (Relative atomic masses : C=12.00, H=1.008, N=14.00, O=16.00). | $$C\_{3}H\_{2}NO\_{2}$$ |  |  | |  |  |
|  | FBQ | 6.02Χ10^{23} is called  \_. | Avogadro number |  |  | |  |  |
|  | FBQ | A chemical formula which shows the actual numbers and types of atoms present in one molecule of a compound is called  \_. | Molecular formula |  |  | |  |  |
|  | FBQ | A chemical formular which represents the elemental composition of a formula unit of the compound in terms of smallest whole number ratios of the atoms present is called  \_. | Empirical formular |  |  | |  |  |
|  | FBQ | The number of atoms in the atomic mass of every element is called  \_. | mole |  |  | |  |  |
|  | FBQ | The unit of mole is  \_. | mol |  |  | |  |  |
|  | FBQ | Calculate the formular mass of potassium carbonate.(Relative atomic masses : K=39.10amu, C=12.01amu, 16.00amu). | 138.21amu |  |  | |  |  |
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|  | FBQ | The empirical formula obtained for a compound is  $$ C\_{3}H\_{2}NO\_{2}$$. The gram molecular mass of the compound is found to be 168g. Determine its molecular formular. (Relative atomic masses : C=12.00, H=1.008, N=14.00, O=16.00). | $$C\_{6}H\_{4}N\_{2}O\_{4}$$ |  |  | |  |  |
|  | MCQ | A substance with a pH value of >7< 10 is a ----------  ----. | Strong acid | Weak acid | Weak base | | Strong base | C |
|  | MCQ | If actual yield of an ester is 32.7g and theoretical yield is 35.1g .What is the percentage yield of the ester? | 0.0932 | 0.932 | 0.0093 | | 0.009 | B |
|  | MCQ | The formular obtained by multiplying the number of each atom in the empirical formular by n is called -------  ----- | Molecular formula | Structural formula | Chemical formula | | None of the above | A |
|  | MCQ | There are types of titrimetric analysis. | 5 | 4 | 3 | | 2 | B |
|  | MCQ | In titration, the experimentally determined stoichiometric point of the titration is referred to as-----  ---------. | Flash point | Critical point | Equivalence point | | stop point | C |
|  | MCQ | In a standardization titration involving hydrochloric acid and sodium carbonate, a student recorded the following results for the volume of hydrochloric acid used against 10.00mL of the sodium carbonate solution : 15.60; 14.50;  14.70 aqnd 14.20. If the concentration of the  $$Na\_{2}CO\_{3}$$ standard solution is 0.75moldm^-3, calculate the concentration of the HCl solution | 1.02 Ml | 1.03mL | 1.07mL | | 1.04M | B |
|  | MCQ | The number of gram- equivalent weight of solute in one cubic decimeter of solution is . | Molality | Molarity | Normality | | Norlality | C |
|  | MCQ | There are different techniques for determination of an unknown sample in titrimetric analysis. | 5 | 4 | 3 | | 2 | C |
|  | MCQ | The solution whose concentration is known is called . | titre value | titrant | supersaturated solution | | saturated solution | B |
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|  | MCQ | The concentration of the pure HCl used is 11.7 molar. If $$20.0cm^{3}$$ V1 of 1 1.7 molar of  $$C\_{1}$$ of HCl is diluted to 250cm^{3} of V\_{2}, then the new concentration C\_{2} will be . | $$0.825 moles dm^{-3}$$ | $$0.936moles dm^{-3}$$ | $$9.36moles dm^{-3}$$ | | $$0.718moles dm^{-3}$$ | B |
|  | MCQ | The procedure by which a solution of known concentration iss Added to another solution until the chemical reaction between the two ssolutes is complete is . | volumetric analysis | Gravimetric analysis | Titrimetric analysis | | qualitative analysis | C |
|  | MCQ | From the equation $$2HCl  + Na\_{2}CO\_{3} → 2NaCl + CO\_{2} + H\_{2}O$$, given that 2 moles of HCl reacted with 1 mole of  $$Na\_{2}CO\_{3}$$. What was the concentration of the acid? | $$0.103moldm^{-3}$$ | $$1.03moldm^{-3}$$ | $$10.3moldm^{-3}$$ | | $$103moldm^{-3}$$ | B |
|  | MCQ | $$The label on a stock bottle of an acid reads: 56% by mass and 1.25 specific gravity. If the molar mass of the acid is 56, find the volume of this acid that is required to prepare 250cm^{3} of 1.0 molar concentration of the acid$$. | $$2.0cm^{3}$$ | $$3.0cm^{3}$$ | $$4.0cm^{3}$$ | | $$5.0cm^{3}$$ | A |
|  | MCQ | 3.47g sodium carbonate was dissolved in a 250millilitre standard flask. What is the concentration of the resulting solution | 0.13M | 0.52M | 0.66M | | 0.40M | A |
|  | MCQ | $$The label on a stock bottle of an acid reads: 56% by mass and 1.25 specific gravity. If the molar mass of the acid is 56, find the moles per dm^{3}$$ | $$12.5moldm^{3}$$ | $$25.5moldm^{3}$$ | $$35.5moldm^{3}$$ | | $$45.5moldm^{3}$$ | A |
|  | MCQ | The residue of a chemical reaction is allowed to cool in a . | furnace | dessicator | oven | | fume cupboard | B |
|  | MCQ | In this equation  $$2NaHCO\_{3} → Na\_{2}CO\_{3} + ? +  CO\_{3}$$, the compound represented by ? is  . | NO | $$NO\_{2}$$ | $$N\_{2}O$$ | | $$NO\_{3}$$ | C |
|  | MCQ | When a substance is not available in a pure form, its solution can be standardized by --------------  -. | Re- crystallizing the substance and diluting it | Titrating againt a substance of unknown concntration | Titrating against a substance of known concentration | | Preparing a new solution of the substance | C |
|  | MCQ | A standard solution is a -----  -----------. | Dilute solution | Solution of known concentration | Concentrated solution | | Measured solution | B |
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|  | MCQ | A standard solution of a substance can be prepared if the substance can be obtained in state. | impure state | pure state | neutral state | | acidic state | B |
|  | MCQ | What is the oxidation state of chromium in potassium dichromate? | $$+1$$ | $$+4$$ | $$+6$$ | | $$+7$$ | C |
|  | MCQ | $$The label on a stock bottle of an acid reads: 56% by mass and 1.25 specific gravity. If the molar mass of the acid is 56, find the concentrationin grams per dm{3}$$. | $$500g/dm^{3}$$ | $$600g/dm^{3}$$ | $$700g/dm^{3}$$ | | $$900g/dm^{3}$$ | C |
|  | MCQ | A solution of which the concentration is accurately known is . | Saturated solution | Super saturated solution | oversaturated solution | | Standard solution | D |
|  | MCQ | $$Weight of solute in gram per volume of solutions in cm^{3}$$ multiplied by 100 is . | page of weightercent | percentage of volume | percentage weight by volume | | percentage volume by weight | C |
|  | MCQ | Moles of solute per volume of ssolution in one cubic decimeter is . | Molality | Molarity | Normality | | Norlality | B |
|  | MCQ | If $$15cm^{3 }$$ of 10.25M HCl solution is made up to volume in a 500mL volumetric flask, what will be its new concentrion? | 0.306M | 3.06M | 5.13M | | 0.52M | B |
|  | MCQ | The pH scale range is  . | 0 to 10 | 0 to 12 | 0 to 14 | | 0 to 16 | C |
|  | MCQ | The product represented by the ? in the equation  $$CH\_{3}COO^{-}+ H^{+} +  Na^{+} +OH^{-}→ ?+  H\_{2}O$$ is . | $$CH\_{3}CONa\_{+}$$ | $$CH\_{3}COONa$$ | $$CH\_{3}COO^{-}Na^{+}$$ | | $$CH\_{3}COOONa$$ | C |
|  | MCQ | The reactant represented by the ? In the equation  $$H\_{2}O^{+}$$ +$$ ?$$ →  $$2H\_{2}O$$ is . | $$H\_{2}O$$ | $$OH^{-}$$ | $$H\_{2}$$ | | $$O\_{2}$$ | B |
|  | MCQ | In a typical expeiment in a laboratory, 4.50g of sulphuric acid in  $$250cm^{3}$$ of water was titrated with an impure solution of 5.24g of sodium hydroxide contained in  $$1dm\_{3} $$ . If the titre values of the experiment were $$20.50$$,  $$22.45$$, $$22.60$$ and  $$22.50cm^{3}$$ respectively. Determine the amount in moles of the acid. | $$0.05mol$$ | $$0.0013mol$$ | $$0.058mol$$ | | $$0.131mol$$ | B |
|  | MCQ | The oxidation state of cromium in  $$Cr\_{2}O\_{7}^{2-}$$ is  . | $$-3$$ | $$+3$$ | $$-6$$ | | $$+6$$ | D |

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|  | MCQ | The heat of reaction is measured by the use of  . | Thermometer | Barometer | Calorimeter | | Ammeter | C |
|  | MCQ | What is the oxidation state of iodine in iodate ion? | $$+5$$ | $$+6$$ | $$+7$$ | | $$+8$$ | C |
|  | MCQ | If the mass of an impure acid is 18.0g and mass of impurity is 12.3g, calculate the percentage impurity of the solution. | 0.4833 | 0.5833 | 0.6833 | | 0.7833 | C |
|  | MCQ | The titrimetric analysis involving the titration of EDTA, an organic ligand with a calcium solution cxould be classified as ------  ------- titration. | Acid -base | Redox | Precipitation | | Complexometric | D |
|  | MCQ | The titration involving potassium permanganate  ,$$KMnO\_{4}$$ and ferrous sulphate  $$FeSO\_{4}$$ is an example of a ----------------- titration. | Acid-base | Oxidation-reduction | Precipitation | | Complexometric | B |
|  | MCQ | All thesse are examples of exothermic reactionss EXCEPT . | Addition of concentrated acids to water | Neutralissation reactions | Addition of ammonium chloride to water | | Addition of potassium hydroxide pellets to water | C |
|  | MCQ | A suitable indicator for titration between weak acid and strong base is  . | Any indicator | Methyl orange | Phenolphthalein | | No suitable | C |
|  | MCQ | A substance that loses an electron is said to be  . | Reduced | Oxidized | Hydrolyzed | | carbonized | B |
|  | MCQ | The reaction between aqueous sodium hydroxide and aqueous hydrochloric acid is a reaction | Decompossition | Double decomposition | Neutralisation | | Addition | C |
|  | MCQ | The pH of a solution is a measure of ------------- conentration of the solution. | Hydrogen ion | Water | Carbon dioxide | | Metal ion | A |
|  | MCQ | If a reaction is carried out at a constant pressure, the absolute value of the heat of reaction is equal to the absolute value of the  of the reaction | Enthalphy | Entrophy | Exotherm | | Endotherm | A |
|  | MCQ | A process that is accompanied by a heat gain is said to be  . | Endothermic | Exothermic | symbiotic | | none of the above | A |
|  | MCQ | The titration of a strong acid against a weak base is suitably carried out using ---  --------- | Any indicator | Methyl orange | Phenolphthalein | | Bromothymol blue | B |
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|  | MCQ | The oxidation state of C in  $$H\_{2}C\_{2}O\_{4}$$ is  . | $$-2$$ | $$+2$$ | $$ -4$$ | | $$ +4$$ | D |
|  | MCQ | Calculate the number of mole contained in a solution of tetraoxosulphate VI acid, if the titre value on titration against $$20cm^{3}$$ 0.5 M sodium carbonate is  $$20.24cm^{3}$$. | 0.02mol | 0.04mol | 0.01mol | | 0.15mol | C |
|  | MCQ | The sum of the oxidation states of all elements in a neutral compound add to  . | zero | one | two | | negative one | A |
|  | MCQ | A metal X that raects with metal Y in a solution of Y but does not react with Z in a solution of Z means that -  -------------. | Metal Y is the least reactive | Metal X is the least reactive | Metal Z is the least reactive | | Metal Y and metal Z have equal reactivity | A |
|  | MCQ | The SI designation candela is for --------------base unit. | Electric current | Luminous intensity | Amount of substance | | Temperature | B |
|  | MCQ | The pH of a solution is a measure of the . | Hydroxide ion concentration | Hydrogen ion concentration | carbon concentration | | Nitrogen concentration | C |
|  | MCQ | The first aid given to a person that ingested poisonous chemical in the laboratory include all these EXCEPT ----------------. | cold water to drink | Cold milk to drink | inducing vomiting | | seek emergency medical assistance | C |
|  | MCQ | The second action to perform to resucitate a victim of gas inhaltion in the laboratory is to ---------------  -. | Remove the victim from danger area | Apply artificial respiration | Loosen clothing | | Immediately seek emergency medical assistance | C |
|  | MCQ | Towards the point, both coloured forms will be present in appreciable quantities. | starting point | middle point | end - point | | neutral | C |
|  | MCQ | A measure of the hydrogen ion concentration in a solution is . | acidity | basicity | Ph | | Neutrality | C |
|  | MCQ | An indicator that is colourless in acidic solution is . | methyl orange | methyl red | phenophtalein | | cresol blue | B |
|  | MCQ | When an alkalis chemical splashes into the eye, the second action to be carried out is ---------------. | Apply 1% sodium carbonate | Apply 1% boric acid solution | Flush the eye with a copious amount of clean lukewarm running water | | Put eye drop | B |
|  | MCQ | Acid base titration involves a reaction | Esterification | Neutralization | Redox | | Decomposition | B |
|  | MCQ | When an acidic chemical splashes into the eyes, the first thing to do is --------- | Apply 1% sodium carbonate | Apply 1% boric acid solution | Flush the eye with a copious amount of clean lukewarm running water | | Put eye drop | C |
|  | MCQ | Do not use flat-bottomed flasks in in vacuum experiment is a ------------- hazard | Explosion | Fire | Chemical | | General safety | A |
|  | | | | | |  | | |



MCQ

All these are safety precautions in a chemistry laboratory EXCEPT ----------

-.

carefully read all labels before using chemicals

perform only experiments that have been authorized by the instructor

never pour water into concentrated acid.

wear loose clothings when

in the chemistry laboratory

C

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