

FBQ1: \_\_\_\_\_ is worn in the laboratory to avoid chemicals splashing into the eyes.

Answer: Safety goggles

FBQ2: \_\_\_\_\_ glassware is used to heat and evaporate liquids.

Answer: Evaporating dish

FBQ3: \_\_\_\_\_ is the most precise and accurate method of transferring and delivering liquids.

Answer: Volumetric glassware

FBQ4: Any chemical spilled onto the skin should be washed off immediately with \_\_\_\_\_.

Answer: Soap and water

FBQ5: Flammable solvents should be boiled away in a \_\_\_\_\_.

Answer: Fume hood

FBQ6: The method of separating liquids from solids that involves allowing the solid to settle in a beaker, then transferring the liquid, or supernatant with the aid of a stirring rod to a receiver is called \_\_\_\_\_.

Answer: Decanting

FBQ7: To prevent bumping of a hot liquid out of the container, \_\_\_\_\_ is added.

Answer: boiling chip

FBQ8: Reaction requiring low temperature of 00C can be carried out in the laboratory by employing \_\_\_\_\_.

Answer: Ice-water bath

FBQ9: In distillation the resultant hot vapour passes into a \_\_\_\_\_ and is converted to the liquid.

Answer: Condenser

FBQ10: Vaporisation-condensation cycles is known as \_\_\_\_\_.

Answer: Theoretical plates

FBQ11: The apparatus below is called \_\_\_\_\_.

Answer: Flat bottom flask

FBQ12: Compounds which are \_\_\_\_\_ crystallise first in recrystallization/crystallization technique

Answer: Less soluble

FBQ13: A suitable recrystallization solvent should be partially \_\_\_\_\_ in order to be easily removed from the purified crystals.

Answer: Volatile

FBQ14: \_\_\_\_\_ is the recovery of a substance from a mixture by bringing it into contact with a solvent which dissolves the desired material.

Answer: Extraction

FBQ15: Distillation technique is applicable or suitable for substances that are \_\_\_\_\_ in nature.

Answer: Liquid

FBQ16: \_\_\_\_\_ is a technique based on the principle of the equilibrium distribution of a substance (solute) between two immiscible phases, one of which is usually a solvent.

Answer: Extraction

FBQ17: Extraction is carried out by shaking the solution in a \_\_\_\_\_.

Answer: Separatory funnel

FBQ18: Solvents used to extract organic compounds from aqueous mixture or solution must be \_\_\_\_\_ in water

Answer: Virtually insoluble

FBQ19: Boiling point is a \_\_\_\_\_ property often used to identify substances or to check the purity of the compound

Answer: Physical

FBQ20: The apparatus here presented is called \_\_\_\_\_.

Answer: Buchner funnel

FBQ21: The \_\_\_\_\_ cools vapour causing it to reliquify and direct the condensate to the receiving flasks.

Answer: Lie-big condenser

FBQ22: \_\_\_\_\_ are used to crush solids into powders for experiments.

Answer: Mortar and pestle

FBQ23: \_\_\_\_\_ are used to hold many different things such as flasks, crucibles and evaporating dishes when they are hot.

Answer: Tong

FBQ24: Burettes are used to deliver accurate \_\_\_\_\_ .

Answer: Volumes

FBQ25: This apparatus is used for \_\_\_\_\_.

Answer: Measuring liquids by volume

FBQ26: The instrumental set up above is used for \_\_\_\_\_.

Answer: Filtration

FBQ27: The difference between a simple distillation apparatus and a fractional distillation apparatus is that, between the distillation flask and the distillation head is inserted \_\_\_\_\_ column.

Answer: Fractionating column

FBQ28: A \_\_\_\_\_ is defined as the temperature range over which a small amount of solid in a thin walled capillary tube first visibly softens and then completely liquefies.

Answer: Capillary melting point

FBQ29: This apparatus is used for \_\_\_\_\_.

Answer: Measuring liquids by volume

FBQ30: The presence of a \_\_\_\_\_ in a crystal lattice interrupts its uniform structure and the forces of attraction are weakened.

Answer: Foreign particle

FBQ31: To avoid the errors in mass due to the use of balances that are not calibrated, one should weigh by a method called \_\_\_\_\_.

Answer: Weighing by difference

FBQ32: The function of stirring when carrying out a chemical reaction in the laboratory is to \_\_\_\_\_ the reagents or to aid heat transfer.

Answer: Mix

FBQ33: The process of boiling reactants while continually cooling the vapour returning it back to the flask as a liquid is known as \_\_\_\_\_.

Answer: Reflux

FBQ34: \_\_\_\_\_ is often used to heat solutions that boil below about 90°C or to heat a mixture to approximately 100°C.

Answer: Steam bath

FBQ35: The most basic technique for the purification of organic solids is

Answer: Recrystallization

MCQ1: In preparing a standard solution, two factors must be considered, namely:

Answer: 1. The solute must be pure 2. The suitable solvent should be measured to a definite volume

MCQ2: A solution contains 1.2 Molar concentration, what volume of it must be diluted with water to give 600 mls of 0.5 Molar solution?

Answer: 25 mls

MCQ3: In a chemistry laboratory a stopper bottle of acid solution reads, "1.25 specific gravity"; what does that mean?

Answer: 1 cm<sup>3</sup> of that solution weighs 1.25 g

MCQ4: If 2 cm<sup>3</sup> of a stock solution contains 1 mole of an acid how would you prepare 1 molar concentration of that acid in 250 cm<sup>3</sup> of water?

Answer: Dissolve 2 cm<sup>3</sup> of the stock solution in 248 cm<sup>3</sup> of water

MCQ5: A substance which loses water of hydration upon exposure to atmosphere is called?

Answer: Efflorescence substance

MCQ6: A substance which takes in only moisture upon exposure to atmosphere is referred to as?

Answer: Deliquescent substance

MCQ7: A table of requirements for laboratory experiment contains the following except?

Answer: List of weights of each reagent

MCQ8: Give reason why water should not be added to acid during carrying out acid-base titration?

Answer: The dissolution of acid in water is exothermic which may cause explosion

MCQ9: The concentration of pure HCl is 11.7 Molar if 20 cm<sup>3</sup> of the acid is diluted to 250 cm<sup>3</sup> to give a concentration of 0.936 mol/dm<sup>3</sup> substitute these values in this equation;  $C_1V_1 = C_2V_2$ ?

Answer:  $11.7 \times 20 = 0.936 \times 250$

MCQ10: The point at which stoichiometrically equivalent quantities of substance have been brought together is known as?

Answer: Equivalence point of titration

MCQ11: Which of the following options is an indicator used for acid-base titration?

Answer: Methyl orange

MCQ12: In an acid base titration conducted by a student, the colour of the solution in the beaker changed from colourless to pink when phenolphthalein was used as an indicator, what went wrong?

Answer: The beaker was occupied by acid solution instead of base.

MCQ13: What is a pH of a solution?

Answer: It is the measure of hydrogen ions concentration in the solution

MCQ14: At neutralization point, the pH value is?

Answer: Seven

MCQ15: At complete neutralization point, the litmus paper colour turns?

Answer: Purple

MCQ16: Predict the colour of methyl orange when pH is 8?

Answer: Yellow

MCQ17: What is the colour of bromothymol when added to an acid solution?

Answer: Yellow

MCQ18: An indicator X was added to an acid solution in a beaker but no colour change was observed give the name of the indicator X?

Answer: Phenolphthalein

MCQ19: What is a strong acid?

Answer: Any acid that ionizes completely in solution

MCQ20: An example of a strong acid is?

Answer: H<sub>2</sub>SO<sub>4</sub>

MCQ21: What type of indicator will be suitable for use in a titration involving H<sub>2</sub>SO<sub>4</sub> + NH<sub>3</sub>(aq)?

Answer: Methyl orange

MCQ22: Which of these indicators will be suitable for use in a titration involving a weak acid and a strong base?

Answer: Phenolphthalein

MCQ23: What is the implication of adding a phenolphthalein as an indicator during the titration of HCl against Na<sub>2</sub>CO<sub>3</sub>?

Answer: The end point will appear when only half of Na<sub>2</sub>CO<sub>3</sub> has been used

MCQ24: What is the importance of back titration?

Answer: To determine the concentration of a substance that is in excess after a chemical reaction.

MCQ25: A 25 ml solution of 0.5 M NaOH is titrated until neutralized into a 50 ml sample of HCl?

Answer: 0.25 mol

MCQ26: A student used a hard tap water and performed an acid base titration. In few lines explain what would happen to his result?

Answer: The starting solution would be more alkaline therefore it would require more volume of acid than expected

MCQ27: Choose the most suitable water for use in acid base titration?

Answer: Deionised water

MCQ28: Both molarity and normality are measures of concentration. True or false?

Answer: True

MCQ29: During acid-base titration sulphuric acid would be dissociated into what ions?

Answer: 2H<sup>+</sup> + SO<sub>4</sub><sup>2-</sup>

MCQ30: What is a titrand in titration analysis?

Answer: Unknown concentration of an analyte

MCQ31: What is a titrant in titration analysis?

Answer: Known concentration and volume of an analyte

MCQ32: Which of these is a method of finding the equivalence point?

Answer: All of the options

MCQ33: When performing acid-base titration, one should first?

Answer: Rinse the burette twice with acid solution

MCQ34: The equation NaOH + HCl → NaCl + H<sub>2</sub>O is a \_\_\_\_?

Answer: Neutralization reaction

MCQ35: The following are advantages of acid base titration except?

Answer: Less accuracy and precision

MCQ1: Amongst the glassware listed below \_\_\_\_\_ is the most precise and accurate method of transferring and delivering liquids.

Answer: Graduated cylinders

MCQ2: \_\_\_\_\_ is not a separation technique frequently employed in the laboratory to isolate one or more components from a mixture?

Answer: Crystallography

MCQ3: Which of these statements is true?

Answer: Simple distillation involves one cycle of vaporisation - condensation

MCQ4: A graduated cylinder is filled to the 40.00 ml mark with mineral oil. The masses of the cylinder before and after the addition of mineral oil are 124.966 g and 159.446 g. Determine the density of the mineral oil.

Answer: 0.8620 g/ml

MCQ5: A suitable recrystallization solvent is one that \_\_\_\_\_.

Answer: Does not react with the compound being purified

MCQ6: An extraction solvent is usually a \_\_\_\_\_.

Answer: Volatile organic liquid

MCQ7: \_\_\_\_\_ amongst the options is not used in gravity filtration?

Answer: Test tube

MCQ8: Reagents can be agitated/ mixed during a chemical reaction by the use of \_\_\_\_\_.

Answer: Magnetic stirrer

MCQ9: The function of placing wire gauze between a vessel containing a substance to be heated and a burner is \_\_\_\_\_.

Answer: To provide support and disperse heat

MCQ10: When acid is spilled in the laboratory it should be \_\_\_\_\_.

Answer: Neutralised with sodium bicarbonate

MCQ11: \_\_\_\_\_ does not yield a pure product.

Answer: Extraction

MCQ12: \_\_\_\_\_ bonds are broken during a change from the liquid phase to the gas phase.

Answer: Dipole - dipole interactions

MCQ13: One of the disadvantages of wearing loose sleeves to the laboratory during a practical class is \_\_\_\_\_.

Answer: They can sweep flasks from the laboratory bench

MCQ14: \_\_\_\_\_ provides a large surface area in which the initial distillate is redistilled and condensed again.

Answer: Fractionating column

MCQ15: Amongst the various means/method of heating \_\_\_\_\_ is used to heat a mixture for extended periods and at certain temperatures.

Answer: Refluxing

MCQ16: Separatory funnel is used to separate \_\_\_\_\_

Answer: Two immiscible liquids

MCQ17: \_\_\_\_\_ will not provide heat of over 1000C ?

Answer: Heating mantle

MCQ18: \_\_\_\_\_ is ideal for measuring liquids by volume.

Answer: Graduated cylinder

MCQ19: \_\_\_\_\_ is not a volumetric glassware.

Answer: Round bottom flask

MCQ20: Darkened brown or amber glass is used to \_\_\_\_\_.

Answer: Keep out much of UV and IR radiation

MCQ21: Reactions requiring low temperatures can be achieved using all of the options provided to maintain low temperature except \_\_\_\_\_.

Answer: Liquid helium

MCQ22: Glassware are used for experiments in the Chemistry laboratory because \_\_\_\_\_.

Answer: They are relatively inert, transparent and more heat-resistant

MCQ23: Which of these is/are more accurate and precise in taking weight measurements?

Answer: Digital balance

MCQ24: The principle of separation of insoluble solid from a liquid by filtration is based on \_\_\_\_\_.

Answer: Gravity

MCQ25: All of the following can be used to separate liquids from solids except \_\_\_\_\_.

Answer: Distillation

MCQ26: Extraction is used for the separation of materials that are \_\_\_\_\_ in nature.

Answer: Liquid and solid

MCQ27: Using an unclean volumetric glassware during experiment will \_\_\_\_\_.

Answer: Reduce precision

MCQ28: What does the symbol below represent in the Chemistry laboratory.

Answer: Toxic

MCQ29: Which of the following is not employed in heating ?

Answer: Drying agent

MCQ30: Extraction is carried out by shaking the solution with a second solvent that is \_\_\_\_\_ with the one in which the compound is dissolved.

Answer: Immiscible

MCQ31: Amongst the options listed below \_\_\_\_\_ is a better choice for the heating of flammable substances.

Answer: Steambath

MCQ32: Substances that absorb water if left exposed to the air are kept dry in the laboratory by placing them in \_\_\_\_\_.

Answer: A dessicator

MCQ33: \_\_\_\_\_ is used to hold solids when being weighed.

Answer: Watch glass

MCQ34: A chemist would determine several physical and chemical properties of a compound because \_\_\_\_\_.

Answer: It is possible for two different compounds to have a few identical physical and chemical properties.

MCQ35: \_\_\_\_\_ is the most common extraction solvent.

Answer: Ethyl ether