Professional Certificate in Veterinary Pharmacy Management

Pharmaceutical Calculations for Veterinary Pharmacy

Pharmaceutical Calculations Glossary

Absorption
Absorption refers to the process by which a drug is taken up from the site of administration into the bloodstream. This is an important concept in pharmaceutical calculations as the rate and extent of absorption can affect the dosing regimen of a drug.

Acid-base Titration
Acid-base titration is a method used to determine the concentration of an acid or base solution. This is often used in pharmaceutical calculations to ensure the accuracy of a drug formulation.

Active Ingredient
The active ingredient is the component of a drug that produces the desired therapeutic effect. It is important to accurately calculate the amount of active ingredient in a drug formulation to ensure proper dosing.

Aliquot
An aliquot is a portion of a sample that is taken for analysis or experimentation. In pharmaceutical calculations, aliquots are often used to measure precise amounts of a drug or ingredient.

Aqueous Solution
An aqueous solution is a solution in which water is the solvent. Many drug formulations are aqueous solutions, and pharmaceutical calculations often involve determining the concentration of a drug in such solutions.

Concentration
Concentration refers to the amount of a substance present in a given volume of solution. In pharmaceutical calculations, concentration is crucial for determining the proper dosing of a drug.

Conversion Factor
A conversion factor is a ratio used to convert one unit of measurement to another. In pharmaceutical calculations, conversion factors are often used to convert between different units of weight or volume.

Decoction
A decoction is a method of extracting the active ingredients from plant materials by boiling them in water. Pharmaceutical calculations may involve determining the concentration of a drug in a decoction.

Dilution
Dilution is the process of reducing the concentration of a solution by adding more solvent. In pharmaceutical calculations, dilution is often necessary to achieve the desired concentration of a drug.

Dispensing
Dispensing refers to the preparation and distribution of medication to patients. Pharmaceutical calculations are essential in the dispensing process to ensure accurate dosing.

Dosage
Dosage refers to the amount of a drug that is prescribed for a patient. Pharmaceutical calculations are used to determine the appropriate dosage based on factors such as the patient's weight and the desired therapeutic effect.

Drug Formulation
A drug formulation is the specific composition and preparation of a drug product. Pharmaceutical calculations are required to accurately formulate drugs to ensure safety and efficacy.

Extraction
Extraction is the process of removing the active ingredients from a raw material, such as a plant or animal tissue. Pharmaceutical calculations may involve determining the efficiency of an extraction process.

Filtration
Filtration is a method used to separate solid particles from a liquid by passing the mixture through a filter. Pharmaceutical calculations may involve determining the volume or concentration of a drug after filtration.

Galenic Pharmacy
Galenic pharmacy is the branch of pharmacy that focuses on preparing medications using natural sources. Pharmaceutical calculations in galenic pharmacy often involve working with plant extracts and natural ingredients.

Half-life
The half-life of a drug is the time it takes for half of the drug to be eliminated from the body. Pharmaceutical calculations may involve determining the dosing interval of a drug based on its half-life.

Infusion
An infusion is a method of delivering medication through a slow, continuous drip. Pharmaceutical calculations are necessary to determine the infusion rate and total volume of medication to be administered.

Isotonic
An isotonic solution is a solution that has the same osmotic pressure as body fluids. Pharmaceutical calculations may involve preparing isotonic solutions to prevent irritation at the site of administration.

Liquid Dosage Form
A liquid dosage form is a drug formulation that is in liquid form, such as a solution, suspension, or emulsion. Pharmaceutical calculations are essential for determining the concentration and volume of liquid dosage forms.

Molarity

Molarity is a measure of the concentration of a solution, defined as the number of moles of solute per liter of solution. Pharmaceutical calculations often involve working with molarity to prepare drug formulations.

Parenteral Administration
Parenteral administration is the administration of medication through routes other than the digestive tract, such as intravenous or intramuscular injection. Pharmaceutical calculations are crucial to ensure accurate dosing with parenteral administration.

Potency
Potency refers to the strength or effectiveness of a drug. Pharmaceutical calculations are used to determine the potency of a drug and adjust the dosage accordingly.

Powder Dosage Form
A powder dosage form is a drug formulation that is in powdered form. Pharmaceutical calculations are necessary to accurately measure and dispense powder dosage forms.

Prescription
A prescription is a written order from a healthcare provider for the dispensing of medication to a patient. Pharmaceutical calculations are used to ensure that the prescription is accurately prepared and dosed.

Proportion
Proportion refers to the relationship between different components in a drug formulation. Pharmaceutical calculations may involve determining the proportion of active ingredient to excipients in a drug product.

Reconstitution
Reconstitution is the process of mixing a powdered drug with a liquid to form a solution or suspension. Pharmaceutical calculations are essential to accurately reconstitute drugs and determine the final concentration.

Relative Solubility
Relative solubility refers to the ability of a solute to dissolve in a solvent compared to another solute. Pharmaceutical calculations may involve determining the relative solubility of a drug to optimize its formulation.

Serial Dilution
Serial dilution is a method used to prepare solutions of decreasing concentration by diluting a stock solution multiple times. Pharmaceutical calculations are necessary to determine the dilution factor and final concentration of the solution.

Specific Gravity
Specific gravity is a measure of the density of a substance compared to the density of water. Pharmaceutical calculations may involve working with specific gravity to determine the weight or volume of a drug.

Stability
Stability refers to the ability of a drug to maintain its physical and chemical properties over time.

Pharmaceutical calculations are used to assess the stability of drug formulations and determine appropriate storage conditions.

Suppository
A suppository is a solid dosage form that is inserted into a body cavity, such as the rectum or vagina. Pharmaceutical calculations are essential to accurately prepare and dose suppositories.

Suspension
A suspension is a drug formulation in which solid particles are dispersed in a liquid. Pharmaceutical calculations are crucial for determining the concentration and stability of suspensions.

Systemic Administration
Systemic administration is the administration of medication that is distributed throughout the body. Pharmaceutical calculations are important for determining the appropriate dose for systemic administration to achieve the desired therapeutic effect.

Tablet Dosage Form
A tablet dosage form is a solid drug formulation that is compressed into a tablet shape. Pharmaceutical calculations are necessary to accurately formulate and dose tablet dosage forms.

Topical Administration
Topical administration is the administration of medication to the skin or mucous membranes. Pharmaceutical calculations are used to determine the appropriate amount of medication for topical administration.

Trituration
Trituration is a method of grinding substances into fine particles using a mortar and pestle. Pharmaceutical calculations may involve determining the particle size and distribution in a triturated drug.

Volume
Volume refers to the amount of space occupied by a substance. Pharmaceutical calculations often involve working with volumes to determine the proper dosing of a drug.

Weighing
Weighing is the process of measuring the weight of a substance using a balance or scale. Pharmaceutical calculations often involve weighing ingredients to prepare drug formulations accurately.

Yield
Yield refers to the amount of product obtained from a chemical reaction or process. Pharmaceutical calculations may involve determining the yield of a drug formulation to optimize production efficiency.