

# CHAPTER 17 STUDY ACIDS BASES

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**What are acid and base?** An acid is any hydrogen-containing substance that is capable of donating a proton (hydrogen ion) to another substance. A base is a molecule or ion able to accept a hydrogen ion from an acid. Acidic substances are usually identified by their sour taste.

**What is the difference between an acid and a base Class 10?** Acid is a kind of chemical compound that when dissolved in water gives a solution with  $H^+$  ion activity more than purified water. A base is an aqueous substance that donates electrons, accepts protons or releases hydroxide ( $OH^-$ ) ions. An acid is a proton donor. While a base is a proton acceptor.

**Is sodium hydroxide a base or acid?**  $NaOH$  (sodium hydroxide) is a base. According to definitions, anything that contains hydroxide-ion and releases it in water is considered a base. So,  $NaOH$  is classified as a base because it separates into  $Na^+$  and  $OH^-$  (hydroxide-ion) in water.

**What is an acid in chemistry?** What is an acid, as defined in chemistry? An acid is any substance that in water solution tastes sour, changes blue litmus paper to red, reacts with some metals to liberate hydrogen, reacts with bases to form salts, and promotes chemical reactions (acid catalysis).

**What are 3 examples of bases acids?** Examples of acids include vinegar, toilet bowl cleaners, lemon juice, and soda. Examples of bases include egg whites, spinach, and chlorine bleach. Examples of neutral substances include water, vegetable oil, table salt, and blood.

**What is the pH of a base?** The scale ranges from 0 to 14. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic. Pure water is neutral, with a

pH of 7.0.

**What are 3 major differences between acids and bases?** A base is an aqueous substance that could absorb hydrogen ions. Acids would look solid, liquid or in the form of gas. It would also have a sour taste. Bases would feel slippery and solid in nature (except for ammonia, which is gaseous).

**What makes an acid vs a base?** The chemical difference between acids and bases is that acids produce hydrogen ions and bases accept hydrogen ions. A base is a substance that neutralises acids. When bases are added to water, they split to form hydroxide ions, written as  $\text{OH}^-$ . We call a base that has been added to water an alkaline solution.

**What is the definition of base?** A base is a substance that can neutralize the acid by reacting with hydrogen ions. Most bases are minerals that react with acids to form water and salts. Bases include the oxides, hydroxides and carbonates of metals. The soluble bases are called alkalis. Sodium hydroxide is an alkali.

**Is vinegar an acid or base?** Vinegar is acidic because of its low PH. Consuming it doesn't affect your body's natural pH levels, which stay stable unless you have an underlying medical condition. Vinegars are versatile liquids used for cooking, food preservation, and cleaning.

**Is  $\text{H}_2\text{O}$  a base or acid?** Pure water is neither acidic or basic; it is neutral.

**Is baking soda a base or an acid?** Baking soda is basic in nature because it is made up of a strong base( $\text{NaOH}$ ) and weak acid( $\text{H}_2\text{CO}_3$ ). The chemical name of baking soda is sodium bicarbonate and its formula is  $\text{NaHCO}_3$ .

**What does pH stand for?** The letters pH stand for potential of hydrogen, since pH is effectively a measure of the concentration of hydrogen ions (that is, protons) in a substance. The pH scale was devised in 1923 by Danish biochemist Søren Peter Lauritz Sørensen (1868–1969).

**What is acid in one word?** : sour, sharp, or biting to the taste. an acid flavor. b. : sharp, biting, or sour in manner, disposition, or nature.

**Do all acids have hydrogen?** Thus we can say that acids are the substances which contain hydrogen ion, which they liberate when they react with active metals. All acids contain hydrogen but all hydrogen containing compounds are not acids, for example, glucose ( $C_6H_{12}O_6$ ) and alcohol ( $C_2H_5OH$ ) contain hydrogen but they are not acids.

**What does pH measure?** pH is a measure of how acidic/basic water is. The range goes from 0 - 14, with 7 being neutral. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base. pH is really a measure of the relative amount of free hydrogen and hydroxyl ions in the water.

**Which acid is the weakest?** Hydrocyanic acid is the weakest acid with the  $pK_a$  value of 9.2. It partially ionises in water to give hydrogen ion and cyanide ions. The cyanide ion is the strongest conjugate base. The hydrocyanic acid is then represented as  $HCN$ .

**What is the strongest to weakest base?** The eight common strong bases listed from strongest to weakest are: cesium hydroxide ( $CsOH$ ), rubidium hydroxide ( $RbOH$ ), lithium hydroxide ( $LiOH$ ), sodium hydroxide ( $NaOH$ ), barium hydroxide ( $Ba(OH)_2$ ), strontium hydroxide ( $Sr(OH)_2$ ), potassium hydroxide ( $KOH$ ), and calcium hydroxide ( $Ca(OH)_2$ ).

**What do bases create?** In 1884, Svante Arrhenius proposed that a base is a substance which dissociates in aqueous solution to form hydroxide ions  $OH^-$ .

**What is the pH of blood?** Blood is normally slightly basic, with a normal pH range of about 7.35 to 7.45. Usually the body maintains the pH of blood close to 7.40. A doctor evaluates a person's acid-base balance by measuring the pH and levels of carbon dioxide (an acid) and bicarbonate (a base) in the blood.

**How to calculate pH?**  $pH = -\log [H_3O^+]$ . The hydronium ion concentration can be found from the pH by the reverse of the mathematical operation employed to find the pH. Example: What is the hydronium ion concentration in a solution that has a pH of 8.34? On a calculator, calculate  $10^{-8.34}$ , or "inverse" log (- 8.34).

**What do bases react with?** Bases react with acids to form salts and promote certain chemical reactions (base catalysis). chemical reaction

chemical reactions.

**What ions do bases produce?** Bases can be defined as substances that produce hydroxide ions when dissolved in water ( $\text{OH}^-$ ). Acids and bases. An Arrhenius acid is any substance that ionizes when it dissolves in water to give the  $\text{H}^+$  or hydrogen. An Arrhenius base is any substance that gives the  $\text{OH}^-$ , or hydroxide, an ion when it dissolves in water.

**What color does phenolphthalein turn in a base?** Phenolphthalein is naturally colourless and works differently than litmus paper. Also, it turns pink colour in an alkaline solution or base. Moreover, the compound remains colourless in acids but starts to turn pink on pH 8.2 and continues to turn bright purple in strong bases.

**What is a simple definition of base?** In chemistry, a substance that can accept hydrogen ions in water and can neutralize an acid. Bases feel soapy or slippery on the skin and they can turn certain dyes blue. An example of a base is sodium hydroxide. Basicity is measured on a scale called the pH scale.

**How do you identify acids and bases?** To determine whether a substance is an acid or a base, count the hydrogens on each substance before and after the reaction. If the number of hydrogens has decreased that substance is the acid (donates hydrogen ions). If the number of hydrogens has increased that substance is the base (accepts hydrogen ions).

**Is water an acid or base?**  $\text{H}_3\text{O}^+$  is called a hydronium ion, and it makes things acidic.  $\text{OH}^-$  is called a hydroxyl ion and it makes things basic. However, in water, there is a balance between hydroniums and hydroxyls so they cancel each others' charges. Pure water is neither acidic or basic; it is neutral.

**What is an acid and a base together?** If we mix equal amounts of an acid and a base then two chemicals essentially cancel out each other and produce salt and water. Mixing equal amounts of a strong acid with strong base results in a neutral solution whose pH value remains 7 and this type of reactions are known as neutralization reactions.

**What are 5 examples of bases?**

**What is the short answer of acid?** An acid is a chemical substance, usually a liquid, which contains hydrogen and can react with other substances to form salts. Some acids burn or dissolve other substances that they come into contact with.

**What is base in very short answer?** A base is a substance that can neutralize the acid by reacting with hydrogen ions. Most bases are minerals that react with acids to form water and salts. Bases include the oxides, hydroxides and carbonates of metals. The soluble bases are called alkalis. Sodium hydroxide is an alkali.

**What is the definition of an acid and a base?** Arrhenius's Definition of Acids and Bases An acid is a substance that forms hydrogen ions  $H^+$  when dissolved in water, and. A base is a substance that forms hydroxide ions  $OH^-$  when dissolved in water.

**What does pH stand for?** The letters pH stand for potential of hydrogen, since pH is effectively a measure of the concentration of hydrogen ions (that is, protons) in a substance. The pH scale was devised in 1923 by Danish biochemist Søren Peter Lauritz Sørensen (1868–1969).

**Do all acids start with H?** Compounds beginning with H (Hydrogen) are usually considered to be acids. When were asked to write the formula for an acid, when given the name, we follow a set of rules depending on the type of acids.

**What do bases create?** When bases are added to water, they split to form hydroxide ions, written as  $OH^-$ . We call a base that has been added to water an alkaline solution. If we look at some formulas for bases, we can see that they all contain hydroxide ( $OH^-$ ) ions – for example:  $NaOH$  – sodium hydroxide (caustic soda)

**Are bases positive or negative?** It appears that acids do contain net positive charge, while bases contain net negative charge.

**Is blood acid or base?** Blood is normally slightly basic, with a normal pH range of about 7.35 to 7.45. Usually the body maintains the pH of blood close to 7.40. A doctor evaluates a person's acid-base balance by measuring the pH and levels of carbon dioxide (an acid) and bicarbonate (a base) in the blood.

**What is the pH of an acid?** pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base.

**What do bases react with?** Bases react with acids to form salts and promote certain chemical reactions (base catalysis). chemical reactionLearn more about chemical reactions.

**What is the strongest base solution?**

**Da quando verrà abolito l'esame di Stato degli psicologi?** Per quanto riguarda il suddetto esame di stato, questo verrà abolito dall'anno accademico successivo a quello in corso di adozione dei decreti vettoriali. Al momento si parla, quindi, dell'anno accademico 2023/2024.

**Come sarà Esame di Stato psicologia 2024?** 163 l'esame di Stato sarà costituito da una sola prova orale. Come stabilito dalla ordinanza ministeriale nn. 635 del 29/4/2024 le prove orali saranno svolte in presenza a partire da giovedì 25 luglio 2024 secondo il calendario che sarà pubblicato indicativamente una settimana prima della precedente data.

**Come funziona l'esame di Stato per gli psicologi?** Allo stato attuale, l'esame di stato consiste di quattro prove: tre scritte e una orale. Ogni corso di laurea decide la propria commissione d'esame che rimane in carica per due sessioni successive: maggio/giugno- ottobre/novembre. Solitamente ne fanno parte sia membri interni al dipartimento sia esterni.

**Quanto costa l'esame di Stato di psicologia?** La tassa governativa di € 49,58 rimane sempre valida. I candidati iscritti prima dell'anno 2022 che non abbiano ancora sostenuto l'esame mantengono la validità dei contributi versati salvo eventuale conguaglio.

**Quante volte si può fare l'esame di Stato Psicologia?** È necessario procedere con una nuova iscrizione ed effettuare nuovamente i pagamenti richiesti; l'esame dovrà essere ripetuto integralmente. Non esiste un numero massimo di volte in cui sostenere l'esame di Stato di abilitazione alla professione.

**Come entrare a Psicologia 2024 2025?** Per partecipare alla selezione è necessario superare il test TOLC-PSI e presentare domanda di ammissione. Possono partecipare alla selezione i cittadini e le cittadine di paesi dell'Unione Europea e le categorie indicate nel bando di ammissione.

**Da quando la laurea in Psicologia è abilitante?** Laurea abilitante alla professione di Psicologo. Come funziona? Le Università telematiche partner di Universim stanno adeguando la propria offerta formativa al fine di poter rendere effettivo il percorso di laurea online abilitante in Psicologia a partire dall'anno accademico 2023-2024.

**Come diventare psicologo 2024?** Per il 2024, l'abilitazione all'esercizio della professione di psicologo è conseguita previo superamento di una prova orale su questioni teorico-pratiche relative all'attività svolta durante il medesimo tirocinio professionale nonché su aspetti di legislazione e deontologia professionale, disciplinata dal decreto ...

**Cosa può fare uno psicologo dopo l'abilitazione?** Sono in pochi a pensarci, ma uno degli sbocchi professionali dopo una laurea in Psicologia potrebbe essere nell'ambito dell'istruzione. In particolare si può scegliere tra: il dottorato di ricerca in università, il lavoro di insegnante (spesso di sostegno) negli istituti superiori di primo e di secondo grado.

**Per chi è abolito l'esame di Stato?** 18 del 17 marzo 2020 che ha abolito l'esame di Stato per l'abilitazione alla professione medica.

**Quali sono gli esami più difficili di psicologia?** Ma bisogna dire che storia della psicologia spaventa molti studenti. Perché? In questo caso il problema sono le date e i nomi, le successioni di teorie da ricordare e la precisa collocazione storica da tenere a mente. Questi sono tre esami che sono risultati difficili e tosti da affrontare ai nostri studenti.

**Quanto guadagna al mese uno psicologo?** Uno psicologo guadagna in media 13.491 euro all'anno, il che sta a significare poco più di 1.100 euro al mese. Il dato diventa ancor più interessante se rapportato al decennio precedente. Secondo i dati contenuti nel sesto Rapporto AdEPP il calo dei redditi degli psicologi è pari al 12,6% nel decennio 2005-2015.

**Cosa fare dopo aver passato esame di Stato psicologia?** Ho superato l'Esame di Stato. Come posso iscrivermi all'Albo degli Psicologi? Per presentare domanda d'iscrizione all'Albo è sufficiente seguire la procedura descritta alla pagina [www.ordinepsicologilazio.it/iscrizione](http://www.ordinepsicologilazio.it/iscrizione).

**Quanto tempo ci vuole per iscriversi all'albo degli psicologi?** L'iscrizione all'Albo viene deliberata nell'ambito di una seduta consiliare. Come da normativa vigente, l'Ordine notifica, per posta raccomandata A/R, l'accoglimento della domanda entro venti giorni dalla data della seduta consiliare in cui l'iscrizione è stata deliberata.

**Quanto dura l'esame di Stato psicologia?** La durata della singola prova, e quindi dell'intero esame, sembrerebbe essere solitamente tra i 30 e i 40 minuti circa (a volte ci hanno messo un po' meno, altre di più).

**Come saranno gli esami di abilitazione 2024?** Per il 2024 si conferma lo stesso impianto: ci sono due prove scritte a carattere nazionale (decise, cioè, dal Ministero) e un colloquio.

**Da quando sarà abolito l'esame di Stato?** 276 del 19-11-2021) prevede l'eliminazione dell'esame di Stato ai fini dell'abilitazione per alcune professioni. In pratica, grazie a questa nuova norma, l'abilitazione si consegnerà già con l'esame finale del corso di studi, previa acquisizione di crediti formativi attraverso tirocini pratici.

**Quando la laurea in Psicologia diventa abilitante?** Gli studenti interessati a questo percorso potranno iscriversi a partire dall'1 agosto 2023 (non prima). Con l'introduzione della laurea magistrale in Psicologia abilitante tutte le ore di tirocinio diventano interne al percorso di studi.

**Per chi è abolito l'esame di Stato?** 18 del 17 marzo 2020 che ha abolito l'esame di Stato per l'abilitazione alla professione medica.

**What is the difference between 2.5 and 3.5 Nissan Altima?** The sort answer is that the 2.5 is a 4 cylinder engine, and the 3.5 is a V-6.

**What engine is in a 2005 Nissan Altima 3.5 SE?**



**Is the 2005 Nissan Altima 3.5 a good car?** The 2005 Altima can last up to 150,000 miles with engine and transmission problems. At \$3,898 – 6,732 it's cheap, but they are expensive to keep running. Passenger space is great, the V6 engine is quick and the interior materials are high-quality for the price.

**How many miles will a 2005 Nissan Altima last?** In terms of mileage and overall lifespan, you can expect somewhere between 250,000 and 300,000 miles of use from your Nissan Altima assuming that it is well-maintained and kept in adequate shape.

**How long does Nissan Altima 3.5 last?** Data from owners shows that Altimas can last between 250,000 and 300,000 miles, amounting to about 15-20 years, with average driver mileage in mind. It's not uncommon for this model to work well beyond 300,000 miles, but this requires due diligence on the driver's side.

**When did Nissan stop making the 3.5 Altima?** The 3.5 SR was dropped for the 2018 model year, leaving the 2.5 SR as the only available SR trim level. For 2018, the 2.5 SR trim level in the US received two new "Special Edition" packages, which are the 2.5 SR Special Edition and the 2.5 SR Midnight Edition.

**How much horsepower does the 3.5 L Nissan Altima have?**

**Is a Nissan Altima 2.5 a V-6?** The 2023 Nissan Altima has a standard 2.5L four-cylinder engine.

**What is the fastest Nissan Altima?**

**How much can you sell a 2005 Nissan Altima for?** How much is a 2005 Nissan Altima worth? The value of a used 2005 Nissan Altima ranges from \$619 to \$2,535, based on vehicle condition, mileage, and options.

**How far can a 2005 Nissan Altima go on a full tank?**

**What is the best year for Nissan Altima?** The first two 1990s Altimas, the 2008 to 2012 fourth-generation model, and the current sixth-generation version (2019 to present) version have the best records in terms of reliability and durability, but even within those generations, not every reliability tracking outlet agrees on which years

are best.

**How far can a Nissan Altima go on a full tank?** With a tank of gas, the Nissan Altima can go as far as 630 miles. Getting 39 miles per gallon on the highway and 28 miles per gallon in the city, the gas economy comes out to a whopping 32 mpg.

**Can a Nissan Altima last 300000 miles?** The answer to this question largely depends on the maintenance culture of the owner, however, a Nissan Altima can last a long time, with estimates ranging from 250,000 to 300,000 miles, or even 5-20 years, depending on several factors.

**How much did a Nissan Altima cost in 2005?**

**Are Nissans reliable after 100k miles?** Nissan Altima However, the continuously variable transmission found in numerous Altimas tends to experience premature failure, frequently occurring shortly after reaching the 100,000-mile mark. This issue can lead to expensive repairs, says Carter.

**How long does a timing chain last Nissan Altima?** Older cars may have a timing chain, similar to a chain on a motorcycle, with a life cycle of around 60,000 miles. Newer models use timing belts made of polyurethane and Kevlar for long life and durability. They can go as long as 100,000 miles although it's always a good idea to change it before then.

**How long does a CVT transmission last in a Nissan Altima?** How long do Nissan CVT transmissions last? This can vary depending on several factors, such as driving habits, maintenance history, and environmental conditions. Generally, however, a well-maintained Nissan transmission can last up to 100,000 miles or more.

**What years to avoid on a Nissan Altima?** Reliability is top-notch, and registered complaints are minimal. Nissan Altima's worst model years include 2002, 2003, 2009, and 2013-2015. From engine and powertrain failures to faulty electricals, these models are best avoided.

**What year did Nissan Altima have bad transmission?** Nissan has faced ongoing issues with its CVT transmission. A class action lawsuit for owners of 2013-2016 Altimas was settled after safety issues arising from the rough, shuddering and, more importantly, hesitation when pressing on the gas.

## **What is the biggest problem with Nissan Altima?**

**What does 2.5 mean on a Nissan Altima?** The S for the Nissan Altima refers to the trim level. The S is the basic trim level. It will have 4 levels that higher than it which are the SR, SV, SL, and the top of the line Platinum edition. The S model will not have any of the special features that these models have. The 2.5 refers to the size of the engine.

**Is a Nissan Altima 2.5 fast?** Each provides an exciting kick to the Nissan Altima. Most trims of the Nissan Altima are equipped with the standard 2.5L 4-cylinder engine system, which offers the 7.4 second 0-60 mph progression and 188 horsepower on the move.

**How much HP does a 2.5 L Nissan Altima have?** All 2025 Altimas come with a 2.5-liter four-cylinder engine making 188 horsepower and 180 pound-feet of torque (182 horsepower and 178 pound-feet in AWD models). The power is funneled through a continuously variable automatic transmission (CVT).

**Is the Nissan Altima 2.5 a V-6 or V4?** Performance of the Four-Cylinder Engine  
The 2023 Nissan Altima has a standard 2.5L four-cylinder engine.

## **Solution for Probability and Statistics Engineers Scientists 8th Edition**

**Question:** Find the probability that a random variable  $X$  follows a Poisson distribution with parameter  $\lambda = 5$  takes the value  $x = 3$ .

**Answer:**  $P(X = 3) = (e^{-5} * 5^3) / 3! = 0.1404$

**Question:** A fair coin is flipped 10 times. What is the probability of getting exactly 6 heads?

**Answer:**  $P(X = 6) = (10 \text{ choose } 6) * (1/2)^{10} = 252 / 1024 = 0.2461$

**Question:** The waiting time for a bus follows an exponential distribution with parameter  $\lambda = 0.5$ . What is the probability that the waiting time is less than 2 minutes?

**Answer:**  $P(X < 2) = 1 - e^{-(0.5 * 2)} = 0.6321$

**Question:** A sample of 100 measurements has a mean of 50 and a standard deviation of 10. Construct a 95% confidence interval for the true mean.

**Answer:** Mean  $\pm$  Z *Standard Error of Mean* = 50  $\pm$  1.96 (10/sqrt(100)) = (47.04, 52.96)

**Question:** Two independent samples are drawn from normal distributions with means  $\mu_1$  and  $\mu_2$  and variances  $\sigma_1^2$  and  $\sigma_2^2$ , respectively. Test the hypothesis that  $\mu_1 = \mu_2$  at the 5% significance level.

**Answer:** Use the two-sample t-test with pooled variance:  $t = (\bar{x}_1 - \bar{x}_2) / \sqrt{(s_1^2 + s_2^2) / (n_1 + n_2)}$  Critical value:  $t_{\alpha/2, n_1+n_2-2}$  If  $|t| > t_{\alpha/2, n_1+n_2-2}$ , reject the null hypothesis (i.e.,  $\mu_1 \neq \mu_2$ ).

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