

EQUILIBRIUM AND PRESSURE GIZMO

ANSWERS

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How can an 11 liter tank give a diver enough oxygen for one hour? An adult breathes about 3 liters of air with each breath. 1. How can an 11-liter tank give a diver enough oxygen for one hour? The amount of oxygen in the tank is very dense.

Why are diving cylinders made of thick reinforced aluminum or steel? Why are diving cylinders made of thick, reinforced aluminum or steel? all these collisions creates pressure on the walls of the container. container is strong enough to withstand the gas pressure.

How do you expect the increased pressure to affect the equilibrium? What is the effect on this equilibrium if pressure is increased? According to Le Chatelier's principle, if pressure is increased, then the equilibrium shifts to the side with the fewer number of moles of gas.

Is a scuba tank 100% oxygen? Many non-divers assume scuba tanks are filled with 100% oxygen. In reality, recreational divers typically use air (approximately 21% oxygen and 79% nitrogen) or Enriched Air Nitrox (ranging from 22% to 40% oxygen with the remainder filled in with nitrogen).

Why is 100% oxygen not used for scuba divers? Oxygen Toxicity During Diving If a person breathes 100% oxygen, this partial pressure would be reached at a depth of 13 feet (4 meters). Because air consists of only 21% oxygen, to reach that toxic partial pressure breathing air would require a dive to slightly over 187 feet (57 meters) in depth.

Is scuba gear heavy? How heavy is a SCUBA tank and gear? A SCUBA tank and gear can weigh between 10 to 80 pounds depending on what you need. A typical setup you might wear for a SCUBA diving adventure could be around 40 to 50 pounds. However, once you are in the water, none of that weight is noticeable.

How much does a scuba tank weigh full? A typical aluminum 80 cu ft scuba tank full of air at 3000 psi weighs about 38.5 lbs. For comparison, a Faber FX high-pressure 80 cu ft steel tank (3440 psi) weighs 37.5 lbs when full. The Faber steel tank is about 5' shorter than the aluminum one and retains a negative buoyancy even when empty.

Why can't you wear swimming goggles for scuba diving? The swim goggle is designed to seal against the inner or outer areas of the eye sockets only, whereas diving and snorkelling masks include the wearer's nose. A swimmer may use a mask, but a diver or snorkeller may not use swim goggles.

How long does 1 tank of oxygen last scuba diving? Typically, an average scuba tank filled to 200 bar (3,000 psi) can last for 30 to 60 minutes at a depth of 10 to 18 metres (30 to 60 feet). However, if you are diving deeper or have a faster breathing rate, the air supply will be used up more quickly, reducing your decompression limit.

How many Litres of oxygen are in a scuba tank? The volume of a standard scuba tank is usually between 4 and 20 liters (the most common are 12 and 15 liters). They usually have a working pressure of 150 bar, 200 bar, 232 bar (often rounded up to 230 bar) or 300 bar.

How much air is in a typical tank for diving? One of the most common tanks in recreational diving is the aluminum 80-cubic-foot tank, which holds 80 cubic feet of air compressed to 3000 pounds per a square inch.

How much oxygen does a human need per minute in Litres? The average adult, when resting, inhales and exhales about 7 or 8 liters of air per minute. That totals about 11,000 liters of air per day.

What is the Islamic perception of business ethics? Every member or employee is bound to follow the designed code of ethics with sincerity, honesty, un corrupted virtue and solidarity so that the organization can achieve the required goals /profit in

business. (5). Islam places the highest emphasis on ethical values in all aspects of human life.

What is the Islamic perspective on business? The desire for wealth is seen as natural, but there is a need for balance, and wealth should not be worshiped. Man may work hard, strive to make his business profitable and seek value for money in expenditure; but for the devout Muslim justice, honesty and compassion should temper these efforts.

What impact does Islamic law have on businesses? It governs many aspects of Muslim life, including finance and business. One of the key aspects of sharia law is that it does not allow the use of interest, which is a core aspect of Western capitalism.

What are the ethics of the Islamic perspective? They include kindness (to people and animals), charity, forgiveness, honesty, patience, justice, respecting parents and elders, keeping promises, and controlling one's anger.

What are the Islamic business ethics and principles? Islamic ethical values are but a complement of universal ethical values. They prescribe compassion, tolerance, leniency, benevolence and hospitality over and above the basic universal values.

What are the ethical business practices in Islam? Thus, the Prophet (peace and blessings of Allah be upon him) stated in a hadith that stresses both brotherhood and fair business practices: "Do not be envious of one another; do not artificially raise prices against one another; do not hate one another; do not turn one's back on each other; and do not undercut one ...

What are the Islamic rules for business?

What are the Islamic core values in business?

What is the Islamic message for business success? Oh Allah, let my affairs be free from care & make them profitable & give me means of livelihood from my share & from where I have no expectation. For the sake of Muhammad and the Progeny of Muhammad.

What is Islamic ethics in business transaction? In as much as men and women are allowed to engage in lawful trade in Islam, the following are the prohibited business transactions according to Islamic law of ethics: • Buying and selling of Haram goods. Sale involving uncertainty. Unjust measures. Price manipulation.

What are the business ethics in Islamic financial system? In an Islamic financial system, by definition, concerns about conformity to norms of Islamic ethics dominate all other concerns. All transactions in an Islamic system must be governed by norms of Islamic ethics as enunciated by the Shariah. Islamic systems are, in essence, ethical systems.

Why is business encouraged in Islam? The Prophet (peace and blessings of Allah be upon him) emphasized the importance of being an entrepreneur. It has been said in the Holy Hadith, "Pay attention to business, because 90 percent of the sustenance is contained in it." Apart from this, the dignity and importance of business are evident in many other hadiths.

What are the 5 ethical categories in Islam? There are 5 main categories of behaviour. 1) Wajib or fard (obligatory) 2) Mustahab (preferred, commendable) 3) Mubah/Halal (permissible) 4) Makruh (discouraged, reprehensible) 5) Haram (absolutely forbidden) Page 2 Wajib or fard (obligatory): Actions that are necessary to comply with.

What are the ethics of Islamic management? Islam lays rules, principles and standards directly or indirectly in all religious and human dealings. It sets code of ethics that govern all types of management which include: trustworthy, honesty, competence and accountability, etc.

What are three basic ethical codes of Islam? Some of the most primary character traits expected of a Muslim are piety, humility and a profound sense of accountability to God. A Muslim is expected to be humble before God and with other people. Islam also enjoins upon every Muslim to exercise control of their passions and desires.

What is the Islamic perspective of ethics? Islamic ethics prescribe its followers to zealously guard their behavior, words, thoughts, and intentions and observe certain norms and moral codes in their family affairs; in dealings with relatives, neighbors,

and friends; in their business transactions; in their social affairs; and in private and public life.

What is unity in Islamic business ethics? In summary, the axiomatic concept of unity (tawhid) creates a sense of social responsibility and justice in mankind due to its vicegerency (Khalifah) of Allah's resources on earth. This makes them trustee (al'amin) of all the resources which he holds in trust (amanah).

What are the pillars of business in Islam? The pillars of Islamic business ethics are Falah, Mashlahat, Unity, Equilibrium, Free Will, Responsibility, and Benevolence.

What is the Islamic perspective of business ethics? In Islam, Islamic business ethics demands and directs Muslims to take actions following what is permitted and prohibited by Allah SWT, including carrying out business activities. Humans are free to do business activities to improve their standard of living.

What Quran says about business ethics? Honesty: The Quran stresses the importance of honesty and integrity in business dealings. "And do not cheat the people in their affairs" (Quran 6:152). Justice: Fairness and justice are important values in Islam. "O you who have believed, be persistently standing firm for Allah, witnesses in justice" (Quran 4:135).

What are the Islamic principles in doing business? The author further explain the main Islamic principles of business and trade including freedom, justice, manners and consideration of others needs and interests whereas the disapproved business conducts are riba, fraud, dishonesty and dealing in prohibited commodities.

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Stoichiometry and Gravimetric Analysis Lab Answers

Paragraph 1: Stoichiometry:

- **Question:** Define stoichiometry.
- **Answer:** Stoichiometry is the study of the quantitative relationships between reactants and products in chemical reactions. It involves calculating the amount of reactants or products involved in a reaction based on the balanced chemical equation.

Paragraph 2: Gravimetric Analysis:

- **Question:** Describe the principle of gravimetric analysis.
- **Answer:** Gravimetric analysis is a technique used to determine the amount of a substance in a sample by isolating the substance in a solid form and measuring its mass. It involves converting the substance into a known, stable compound, which is then precipitated or evaporated to obtain a solid form.

Paragraph 3: Sample Calculations:

- **Question:** A sample of calcium carbonate (CaCO_3) weighing 0.500 g is heated to produce calcium oxide (CaO) and carbon dioxide (CO_2). What mass of calcium oxide (CaO) is produced if the reaction goes to completion?
- **Answer:** The balanced chemical equation for the reaction is $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$.
 - Molar mass of $\text{CaCO}_3 = 100.09 \text{ g/mol}$
 - Molar mass of $\text{CaO} = 56.08 \text{ g/mol}$
 - Moles of $\text{CaCO}_3 = 0.500 \text{ g} / 100.09 \text{ g/mol} = 0.00500 \text{ mol}$

- Moles of CaO produced = 0.00500 mol
- Mass of CaO produced = $56.08 \text{ g/mol} \times 0.00500 \text{ mol} = 0.2804 \text{ g}$

Paragraph 4: Experimental Error:

- **Question:** What are some sources of experimental error in gravimetric analysis?
- **Answer:** Sources of error include:
 - Inaccuracy of weighing equipment
 - Incomplete precipitation or evaporation
 - Contamination of the sample or precipitate
 - Buoyancy effects during weighing

Paragraph 5: Applications:

- **Question:** Provide examples of how stoichiometry and gravimetric analysis are used in real-world applications.
- **Answer:** Applications include:
 - Determining the purity of a substance
 - Analyzing the composition of ores and minerals
 - Controlling chemical reactions in industrial processes
 - Environmental monitoring and pollution control

Wiener Index of a Graph and its Chemical Applications

Q: What is the Wiener index of a graph? A: The Wiener index is a graph-theoretical parameter that measures the distance between all pairs of vertices in a graph. It is defined as the sum of the distances between all pairs of vertices in a graph.

Q: How is the Wiener index used in chemical applications? A: The Wiener index has a variety of chemical applications, including:

- Predicting the boiling point of alkanes
- Estimating the octanol-water partition coefficient
- Modeling the surface tension of liquids
- Correlating molecular connectivity to biological activity

Q: What are the advantages of using the Wiener index in chemical applications?

A: The Wiener index is a simple and efficient parameter that can be easily calculated. It is a global measure that provides an overall description of the molecular structure. Additionally, the Wiener index has been shown to correlate well with a variety of physicochemical properties.

Q: What are the limitations of using the Wiener index in chemical applications?

A: The Wiener index is only a measure of the distance between vertices and does not take into account other factors that may influence physicochemical properties, such as the presence of functional groups or the shape of the molecule. Additionally, the Wiener index does not differentiate between different types of vertices or edges.

Q: What are some of the ongoing research directions related to the Wiener index and chemical applications?

A: Current research directions include the development of modified Wiener indices that take into account additional aspects of molecular structure, the application of the Wiener index to more complex systems, such as proteins and polymers, and the development of new mathematical techniques for calculating the Wiener index efficiently.

[islamic perception of business ethics and the impact of, stoichiometry and gravimetric analysis lab answers, wiener index of a graph and chemical applications](#)

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