

CHE201 MCQs MIDTERM- 100%

GUESS PAPER 2024

Physical Chemistry

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OBJECTIVES

- ❖ Water is universal solvent due to-----? Polarity
- ❖ Oxidation of gold is? Non spontaneous process
- ❖ Two systems that are each found to be in thermal equilibrium with a third system will be found to be in thermal equilibrium with each other is Zeroth law ?
- ❖ In calorimetry we study the change in? heat
- ❖ Freezing point is a..... Property? cogitative
- ❖ The magnitude of force that controls the shape of the liquid is called? tension
- ❖ The dipole moment is found in? water
- ❖ The amount needed to increase the temperature of one mole called? Molar heat capacity
- ❖ Gibbs free energy is a..? state function
- ❖ Fugacity Measuresof a Gas. Non ideality
- ❖ Pv=nRT? Ideal gas equitation.
- ❖ A key property in thermodynamics is Temperature
- ❖ Two thermodynamics systems in equilibrium have same. Temperature
- ❖ If we bring any change at equilibrium the system compensate for change this is called? Le Chatelier's Principle
- ❖ The mass/mass percentage is among the--- CHNOLOGY 3RD Relative amounts
- ❖ The quantitative study and measurement of heat and enthalpy changes is known as thermochemistry.
- ❖ Density and pressure are examples of is. Intensive thermodynamic property
- ❖ The system in which heat change is positive is? Exothermic
- ❖ For a system in mechanical equilibrium, the pressure throughout the system is uniform and equal to the pressure of the surroundings.
- ❖ Entropy of a perfect crystalline substance is zero at -----absolute zero.
- ❖ Importance of this law: it allows us to calculate absolute entropies for substances
- ❖ "It is impossible to reach a temperature of absolute zero."
- ❖ Charles' law is obeyed most accurately in the limit of zero pressure

- ❖ The quantitative study of heat changes is Calorimetry
- ❖ Oxidation of gold..... Non spontaneous process
- ❖ Gibbs energy free is state function
- ❖ Throttling is an example of..... irreversible process
- ❖ Calorimeter is device for measuring the heat developed during a mechanical, electrical, or chemical reaction and for calculating the heat capacity of materials
- ❖ ice calorimeter is used to determine heat capacities of liquids and solids, as well as the heats of certain reactions.
- ❖ Gibbs free energy is a.. (state function)
- ❖ van der Waals in (1873) modified the ideal-gas equation
- ❖ A large number of experiment have determined that 4 variables are sufficient to define the physical condition of a gas?
- ❖ Mechanical Equilibrium: No unbalanced forces act on or within the system; hence the system undergoes no acceleration, and there is no turbulence within the system
- ❖ The amount of heat required to increase the temperature of one mole of a substance by one degree Molar heat capacity
- ❖ Wo Jo four colligative properties ha na us me sey two mcqs aye thy molar or molal pouch rhy thy osmotic pressure or freezing points ka

Property	Symbol	Solute Concentration	Proportionality Constant
Vapor pressure	AP	mole fraction	P_o (vapor pressure of pure solvent)
Boiling Point	ATb	molal	K_b (boiling point constant)
Freezing Point	ATf	molal	K_f (freezing point constant)
Osmotic Pressure	P	molar	RT

- ❖ Ideal gas equation is... $Pv = nRT$
- ❖ A key property in thermodynamic is Temperature.
- ❖ The quantitative study of heat changes is Thermochemistry.
- ❖ If we bring any change at equilibrium the system compensate for change this is called Le Chateliers Principle.
- ❖ The system in which heat change is negative is endothermic.
- ❖ Freezing point is a cogitative property.
- ❖ The amount of heat needed to increase the temperature of one gram of substance by degree is specific heat capacity.
- ❖ Two systems that are each found to be in thermal equilibrium with a third system will be found to be in thermal equilibrium with each other. This generalization from experience is the Zeroth law of thermodynamics
- ❖ Entropy of perfect crystalline substance is zero at absolute zero.
- ❖ A large number of experiments have determined that 4 variables are sufficient to define the physical condition of a gas.
- ❖ When ΔG is negative, the forward reaction is spontaneous.
- ❖ Ideal gas obeys Roults law.
- ❖ Oxidation of gold is example of (non-spontaneous)
- ❖ Gibbs free energy is a.. (state function)
- ❖ If ΔG is positive number the said reaction is?? Nonspontaneous..

- ❖ A key property in thermodynamics is Temperature .
- ❖ The part of thermodynamics in univers is called system
- ❖ Number of experiments has determined that..... Variables are sufficient.. four
- ❖ Density of an ideal gas is directly proportional to it's. Molar mass
- ❖ Two system that are each founde in thermal equilibrium with a third system will be found zeroth law of thermodynamics
- ❖ The amount of heat required to increase the temperature of one mole of a substance by one degree. Molar heat capacity
- ❖ if $k > 1$ it shows..... Products ...
- ❖ Throttling is an example of irreversible.
- ❖ Quantitative study of heat change is called thermochemistry
- ❖ aik water ki koi value pochi thi ans 41th
- ❖ Oxidation of gold is example of.. (non-spontaneous)
- ❖ Defination of Zeroth law: Two systems that are each found to be in thermal equilibrium with a third system will be found to be in thermal equilibrium with each other.
- ❖ Gibbs free energy is a.. (state function)
- ❖ No unbalanced forces act on or within the system : Mechanical Equilibrium:
- ❖ The macroscopic part of the universe under study in thermodynamics is called the System
- ❖ Charles' law is obeyed most accurately in the limit of zero pressure
- ❖ van der Waals in (1873) modified the ideal-gas equation
- ❖ The change in enthalpy is then equal to the heat transferred at constant (pressure)
- ❖ Entropy of a perfect crystalline substance is (zero) at absolute zero
- ❖ Throttling is example of (irreversible process)
- ❖ Describe le chatlier principle in change of temperature , concentrations and pressure?
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- ❖ Gibbs free energy is a.. (state function)
- ❖ Enthalpy is a..... state..... function
- ❖ Two systems that are each found to be in thermal equilibrium with a third system will be found to be in thermal equilibrium with each other ZEROTH law.

- ❖ **Thermodynamics** ----- is the study of heat, work, energy, and the changes they produce in the states of systems.
- ❖ Homogeneous part of a system is called **Phase**
- ❖ Freezing point is a..... property **colligative** property
- ❖ The proportional relation in Charles law is between the **V and the P**
- ❖ **Enthalpy** is a state function when pressure is constant
- ❖ **Surface tension** is the energy required to increase the surface area of a liquid by a unit amount.
- ❖ When atoms in a molecule share electrons unequally, they create what is called a **dipole moment**
- ❖ If a dynamic equilibrium is disturbed by changing the conditions, the position of equilibrium moves to counteract the change is called... **Le Chatelier's Principle**
- ❖ Measurement of the relative amount of the products and reactants in a reaction at given time is called... **The Reaction Quotient**
- ❖ Gibbs free energy is ... **state function** Of a system.
- ❖ Oxydation of gold is example of ...**nonspontaneous**.....reaction.
- ❖ Fugacity Measures ... **Nonideality**.....of a Gas.
- ❖ Thermochemistry study **chemical properties**.
- ❖ **Calorimetry** is study of change | heat and temperature
- ❖ Charls law of gas at constant pressure **absolute temperature**
- ❖ Measurment of relative amount of product present In a given time is called..... **reaction quotient**
- ❖ Water is universal solvent due to----- ? **polarity**
- ❖ Oxidation of gold is ----- ? **Non spontaneous process**
- ❖ Two systems that are each found to be in thermal equilibrium with a third system will be found to be in thermal equilibrium with each other.6.. law? **Zeroth law**
- ❖ In calorimetry we study the change in? **heat**
- ❖ Freezing point isa..... Property? **colligative**
- ❖ The magnitude of force that controls the shape of the liquid is called? **Surface tension**
- ❖ Best example of dipole moment is found in? **Water**
- ❖ The amount needed to increase the temperature of one mole of a substance is called? **Molar heat capacity**
- ❖ Gibbs free energy is a.....? **state function**
- ❖ Fugacity Measures of a Gas. **Non ideality**
- ❖ **Pv = nRT?** Ideal gas equitation.
- ❖ Two thermodynamics systems in equilibrium have same -----? **Temperature**
- ❖ If we bring any change at equilibrium the system compensates for change this is called? **Le Chatelier's Principle**
- ❖ The mass/volume percentage is express the----- ? **Concentration of a solution**
- ❖ The quantitative study of heat changes is called-----? **Thermochemistry**
- ❖ The system in which heat change is positive ? **Exothermic**