

Day & Date: Saturday, 25 /11/2023

Time: 02.30 pm to 04.30 pm

Total Marks: 50

1. Choose the correct alternative for each of the following and rewrite the sentences. 10

- 1)) Standard free energy change of a chemical reaction is represented by _____.
a) ΔG b) ΔH c) ΔE d) ΔG°
- 2) No machine has _____ efficiency.
a) 50% b) 100% c) 10% d) 20%
- 3) _____ of a first order reaction is independent of initial concentration of the reactant.
a) product b) half life c) both a and b d) rate
- 4) Inversion of cane sugar is an example of _____ reaction.
a) first order b) second order c) third order d) pseudo unimolecular
- 5) The number of _____ taking part in a chemical reaction is called Molecularity of the reaction.
a) molecules or atoms b) intermediates c) reactants d) products
- 6) P_c , V_c and T_c are known as _____.
a) gas constants b) critical constant c) Vander waal constants
d) velocity constants
- 7) Rate of reaction affects by _____.
a) concentration of reactants b) temperature c) catalyst d) all of these
- 8) The process that does not occur of its own accord is called as.....
a) Spontaneous b) non spontaneous c) reversible d) none of these
- 9) Thermochemistry is the branch of physical chemistry which deals with _____ accompanying a chemical reaction.
a) thermal changes b) heat changes c) enthalpy changes d) all of these
- 10) Chemical equilibria are _____ in nature.
a) liquid b) solid c) dynamic d) gaseous

Mark(20)

2. Attempt any TWO of the following.

- 1) Deduce, Van der Wall equation which is applicable to real gases.
- 2) Derive the equation for rate constant of a second order reaction with equal

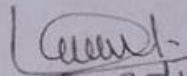
concentration of reactants.

3) Give different statement of first & second law of thermodynamics

3. Attempt any FOUR of the following.

Mark (20)

- 1) Distinguish between Spontaneous and Non-spontaneous processes.
- 2) What are Pseudo unimolecular reactions? Explain it by any one suitable example.
- 3) Explain homogeneous and heterogeneous equilibrium with example .
- 4) Show that time for half change for first order reaction is independent on the initial conc. of reactant.
- 5) Deduce the value of gas constant (R) in terms of critical constants.
- 6) Show that in case of first order reaction . time required to complete 99% reaction is twice the time required to complete 90 % reaction.


चारुधा सखिनी 11/12/20
बाळासाहेब देसाई कॉलेज, पाटण
ता. पाटण, जि. सातारा.