

CONTENT

1. REACTION KINETICS	5
1.1. The rate of reaction	5
1.2 The concept of order of reaction	9
1.3. Reaction molecularity and reaction mechanism.....	11
1.4. First order reactions.....	14
1.5. Second order reactions	17
1.6. Determination of reaction order and rate constant	22
1.7. Opposing reactions	29
1.8. Parallel reactions	32
1.9. Consecutive reactions.....	35
1.10. Temperature dependence of reaction rates	38
1.11. Homogeneous catalysis	43
1.12. Kinetics of heterogeneous reactions.....	47
1.13. Contact catalysis.....	48
2. TRANSPORT PHENOMENA	52
2.1. The laws of diffusion.....	52
2.3. Heat conduction.....	58
2.4. Viscosity	60
2.5. Summary	63
3. ELECTROCHEMISTRY	65
3.1. Fundamental concepts	65
3.2. Equilibrium in electrolytes	66
3.3. Chemical potentials and activities in electrolyte.....	68
3.4. Debye-Hückel theory	71
3.5. The electrochemical potential	72
3.6. Electrochemical cells.....	76
3.7. Thermodynamics of Galvanic cells, the Nernst equation.....	80
3.8. Electrode potentials	82
3.9. Types of electrodes.....	85
3.10. Membrane potentials, glass electrodes.....	88
3.11. Conductivity of electrolytes	91

3.12. Molar conductivity	94
4. ELECTROCHEMICAL RATE PROCESSES.....	98
4.1. Electrode kinetics and polarization	98
4.2. The activation overpotential.....	100
4.3. The diffusion overpotential	105