

Examination topics, Physical Chemistry 2

1. The laws of diffusion
2. Steady state diffusion
3. Heat conduction
4. Viscosity
5. Equilibrium in electrolytes
6. Chemical potentials and activities in electrolytes
7. Debye-Hückel theory
8. The electrochemical potential
9. Electrochemical cells
10. Thermodynamics of Galvanic cells, the Nernst equation
11. Electrode potentials
12. Types of electrodes
13. Membrane potentials, glass electrodes
14. Conductivity of electrolytes
15. Molar conductivity
16. The rate of reaction
17. The concept of order of reaction
18. Reaction molecularity and reaction mechanism
19. First order reactions
20. Second order reactions
21. Determination of reaction order and rate constant
22. Opposing reactions
23. Parallel reactions
24. Consecutive reactions
25. Temperature dependence of reaction rates
26. Homogeneous catalysis
27. Kinetics of heterogeneous reactions
28. Contact catalysis
29. Electrode kinetics, polarization
30. Activation overpotential
31. Diffusion overpotential