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Abstract

The book is a practical guide to laboratory exercises aimed at teaching basic biology topics at the cellular level. Each chapter begins with a brief overview of the educational objectives of the corresponding section, followed by the theoretical part (which provides the fundamental prerequisite knowledge for conducting the laboratory exercise, possible applications in health sciences, index terms, and questions to test understanding of the theory), the practical part (listing the required materials, instruments, and reagents, the steps of the experimental procedure, and comprehension/assessment

questions/exercises), selections from online visual aids, and the bibliography. The practical part of the exercises includes sections on the photonic microscope, the observation of preparations (primary cells, human cells, microorganisms from stagnant water, parasitic worms), fresh preparations from smears of epithelial cells from the inside of the cheek, the anatomy of plant organisms (leaf, root), the phenomenon of osmosis, mitosis in onion root tips, the isolation of singlecelled organisms from peripheral blood, fertilization in sea urchins, and a visit to a museum of biological exhibits.



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