

CONTENTS

PREFACE	7
 PART I: THE CELL	8
Cell membranes	10
Nucleus	14
Chromatin	15
Cell cycle	19
Mitosis	20
Ribosomes	23
Endoplasmic reticulum (ER)	24
Rough (granular) endoplasmic reticulum – RER (GER)	24
Smooth (agranular) endoplasmic reticulum – SER (AER)	26
Golgi complex (Golgi apparatus)	26
Mitochondria	27
Lysosomes	28
Peroxisomes (microbodies)	29
Nonmembranous organelles and cytoskeleton	29
Microtubules	29
Centrosome (diplosome)	29
Microfilaments	30
Intermediate filaments	31
Cell inclusions	31
 PART II: THE TISSUES	33
A. Epithelial tissue	33
Apical surface of epithelia	34
Basement membrane	35
Cell adhesion	36
Junctional complex	38
Covering epithelia	38

Simple epithelia	38
Stratified epithelia.	39
Glandular epithelia	40
Exocrine glands	40
Classification of exocrine glands according to shape	41
Glands according to the mechanism of secretion	42
Glands according to their secretory products.	42
Myoepithelial cells.	44
B. Connective tissue	44
Connective tissue proper.	45
Cells	45
Extracellular matrix	49
Fibers	49
Ground substance.	51
The types of connective tissue proper	52
Cartilage	54
Hyaline cartilage.	54
Elastic cartilage	55
Fibrocartilage	56
Bone	56
Spongy (cancellous, trabecular) bone	58
Compact bone.	58
Ossification.	60
Intramembranous ossification	61
Endochondral ossification	62
Tooth.	65
Development of the teeth	65
Histology of the tooth components	68
Enamel	68
Dentin.	70
Cement.	71
Periodontal membrane	72
The pulp	72
Alveolar bone and gingiva.	73
Blood	73
Plasma	74
Erythrocytes	74
Leukocytes	75
Granulocytes	75
Agranulocytes	78
Thrombocytes.	80
Hematopoiesis	82

C. Muscle tissue	85
Smooth muscle	85
Striated (sarcomeric) muscle	87
Skeletal muscle.	87
Mechanism of contraction	91
Myosatellite cells	92
Cardiac muscle	93
Cardiac conducting system	94
Specialized myocardiocytes – myoendocrine cells	95
D. Nerve tissue	96
Neurons.	96
Classification of neurons	97
Cytology of the neuron.	99
Unmyelinated fibers	102
Myelinated fibers of CNS.	102
Peripheral nerve	102
Synapses and a reflex arc	103
Sensory receptors	105
Free nerve endings	105
Meissner's corpuscles.	106
Pacinian corpuscles	106
Muscle spindles	106
Motor nerve endings.	108
Conduction of nerve impulses	108
Neuroglia	112
Astrocytes.	112
Oligodendrocytes	113
Microglia cells	113
Ependymal cells	114
Satellite cells.	115
Meninges	115
Pia mater.	115
Arachnoid.	115
Dura mater	116
Blood-brain barrier	116
Cerebrospinal fluid	116
Figure captions	118
Literature recommended for further study	122