

Knowledge Test Syllabus 2026 - Reichman University

Knowledge Exam Guidelines:

The exam includes questions in four subjects:

Biochemistry, Molecular Biology, Cell Biology, and Physiology.

The exam contains 120 multiple-choice questions.

The duration of the exam is three hours (180 minutes).

The exam will be conducted in English.

Appeals regarding the questions or the exam grade will not be permitted.

Molecular Biology

Textbook:

Molecular Biology of the Cell - Seventh International Edition, 2022

By: Alberts, Heald, Johnson, Morgan, Raff, Roberts and Walter. W. W. Norton & Company

Chapter	Title	Pages
1	Cells, Genomes, and the Diversity of Life	1-48
4	DNA, Chromosomes, and Genomes	183-252
5	DNA Replication, Repair, and Recombination	253-320
6	How Cells Read the Genome: From DNA to Protein	321-396
7	Control of Gene Expression	397-474
8	Analyzing Cells, Molecules, and Systems	475-562
9	Visualizing Cells and Their Molecules	563-602

Cell Biology

Textbook:

Molecular Biology of the Cell - Seventh International Edition, 2022.

By: Alberts, Heald, Johnson, Morgan, Raff, Roberts & Walter. W. W. Norton & Company

Chapter	Title	Pages
10	Membrane Structure	603-635
12	Intracellular Organization and Protein Sorting	683-747
13	Intracellular Membrane Traffic	749-810
14	Energy Conversion and Metabolic Compartmentation: Mitochondria and Chloroplasts	811-871
15	Cell Signaling	873-887, 892-937
16	The Cytoskeleton	949-1025
17	The Cell Cycle	1027-1087
18	Cell Death	1089-1104
19	Cell Junctions and the Extracellular Matrix	1105-1162

Biochemistry

Textbook:

Principles of Biochemistry, Lehninger, et al., 8th edition, 2021

Chapter	Subsections	Title
1	Introduction, 1.2-1.3	1.2 Chemical Foundations 1.3 Physical Foundations
2	Entire chapter	Water, the Solvent of Life
3	Entire chapter	Amino Acids, Peptides, and Proteins
4	Entire chapter	The Three-Dimensional Structure of Proteins
5	Entire chapter	Protein Function
6	Entire chapter	Enzymes
7	Entire chapter	Carbohydrates and Glycobiology
12	Introduction, 12.1, 12.2, 12.4	12.1 General Features of Signal Transduction 12.2 G Protein-Coupled Receptors and Second Messenger 12.4 Receptor Tyrosine Kinases
13	Introduction, 13.1-13.4	13.1 Bioenergetics and Thermodynamics 13.2 Chemical Logic and Common Biochemical Reactions 13.3 Phosphoryl Group Transfers and ATP 13.4 Biological Oxidation-Reduction Reactions
14	Introduction, 14.1, 14.3, 14.4, 14.5, 14.6	14.1 Glycolysis 14.3 Fates of Pyruvate 14.4 Gluconeogenesis 14.5 Coordinated Regulation of Glycolysis and Gluconeogenesis 14.6 Pentose Phosphate Pathway of Glucose Oxidation
15	Entire chapter	The Metabolism of Glycogen in Animals
16	Entire chapter	The Citric Acid Cycle
17	Entire chapter	Fatty Acid Catabolism
18	Entire chapter	Amino Acid Oxidation and the Production of Urea
19	Entire chapter	Oxidative Phosphorylation
21	Entire chapter	Lipid Biosynthesis
22	Introduction, 22.2	22.2 Biosynthesis of Amino Acids
23	Introduction, 23.2 - 23.3	23.2 Tissue-Specific Metabolism 23.3 Hormonal Regulation of Fuel Metabolism

Physiology

Textbook:

Berne & Levy Physiology 8th Edition, 2018

By: Koeppen & Stanton. Elsevier

Chapter	Title	Pages
1	Principles of Cell Function	2-16
2	Homeostasis of Body Fluids	17-33
4	The Nervous System: Introduction to Cells and Systems Only included: Cellular Components of the Nervous System	50-62
5	Generation and Conduction of Action Potentials Excluded: ○ Receptive Fields ○ Coding of Information by Action Potentials ○ Sensory Coding	63-81
6	Synaptic Transmission Excluded: Neurotransmitter Receptors	82-105
12	Skeletal Muscle Physiology Included: ○ Skeletal Muscle Physiology ○ Organization of Skeletal Muscle ○ Control of Skeletal Muscle Activity ○ Skeletal Muscle Types ○ Modulation of the Force of Contraction ○ Biophysical Properties of Skeletal Muscle Excluded: ○ Modulation of Force by Reflex Arcs ○ Energy Sources During Contraction ○ Oxygen Debt ○ Fatigue ○ Growth and Development ○ Denervation, Reinnervation, and Cross-Innervation ○ Response to Exercise ○ Delayed-Onset Muscle Soreness	238-264