

Zoom Workshop A: Amino Acids & Proteins + Lab Techniques

Sunday January 9 PM EST

Passage Topic	Content Video	Q Bank Location
1. DNA Polymerase Structure/Function	https://www.youtube.com/watch?v=4ffg2hTpW6c	AA, Peptides & Proteins Diagnostic Section II, Q63-68
2. Structure/Function of Hemoglobin	Same as above	AA, Peptides & Proteins Diagnostic Section II, Q69-74
3. Chemical Modification of Histidine Residues in Enzymes	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section V, Q135-139
4. Hypoxia & The Purification of Hypoxia Inducible Factor-1	https://www.youtube.com/watch?v=GRNI2I_fhcA&feature=youtu.be	Chemical & Physical Foundations of Biological Systems #2, Section II, Q71-76
5. Mitochondrial Permeability and Separation Chemistry	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section III, Q77-82

Zoom Workshop B: Enzyme Kinetics & Gene Expression

Sunday January 23 8 PM EST

Passage Topic	Content Video	Q Bank Location
1. Farnesylation of Proteins	https://www.youtube.com/watch?v=hdFs5LUxFFQ	Chemical & Physical Foundations of Biological Systems #2, Section II, Q119-124
2. Chymotrypsin and The Catalytic Triad of Proteases	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section II, Q153-157
3. Altered Catalysis of Subtilisin Mutants Through PCR Mediated Evolution	Same as above	Biological and Biochemical Foundations Diagnostic Test #1, Section I, Q20-25
4. Inducible Gene Expression and Analysis with qPCR	https://www.youtube.com/watch?v=BNh3a6qwnMQ&feature=youtu.be	Biological and Biochemical Foundations Diagnostic Test #1, Section III, Q82-87
5. Arabinose Operon & DNA Looping	Same as above	Microbiology & Immunology, Section I, Q30-36

Zoom Workshop C: Virology and DNA Metabolism & Cancer Biology

Sunday February 13 8 PM EST

Passage Topic	Content Video	Q Bank Location
1. Discovery of Host Restriction Modification	https://www.youtube.com/watch?v=pUYold-QNmk	Microbiology & Immunology, Section I, Q25-29
2. Structure & Function of Poliovirus	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section V, Q140-145
3. Coronavirus Spike Protein	Same as above	Full Length Test, Section III, Q113-117
4. DNA Replication	https://www.youtube.com/watch?v=Q5WnU9ABl18&feature=youtu.be	Full Length Test, Section III, Q165-168)
5. BRCA Genes in Homologous Recombination & Cancer	Same as above	Biological and Biochemical Foundations Diagnostic Test #1, Section II, Q61-66

Zoom Workshop D: Genetic Analysis & The Fed State

Sunday February 20 8 PM EST

Passage Topic

Content Video

Q Bank Location

1. Genetics of Yeast Secretory Pathway

<https://www.youtube.com/watch?v=wY3myshFyNk>

Biological and Biochemical Foundations Diagnostic Test # 1, Section IV, Q130-136

2. Pedigree Analysis of a Neurological Disorder

Same as above

Biological and Biochemical Foundations Diagnostic Test # 1, Section IV, Q137-142

3. Genetics of Lactose Metabolism in *E. coli*

Same as above

Biological and Biochemical Foundations Diagnostic Test # 1, Section IV, Q143-148

4. Role of Fructose in Fat Synthesis

<https://www.youtube.com/watch?v=48gD62S2d9c>

Med-pathway Free MCAT Exam, Section III, Q130-134

5. Regulation of Insulin Secretion

Same as above

Biological and Biochemical Foundations Diagnostic Test # 2, Section III, Q74-78

Zoom Workshop E: Fasted State & Glycogen Metabolism

Sunday March 6 8 PM EST

Passage Topic

Content Video

Q Bank Location

1. Hypoketotic Hypoglycemia

<https://www.youtube.com/watch?v=lpDqBFSQ7Qg&feature=youtu.be>

[Biochemistry & Metabolism, Section I, Q50-54](#)

2. Type I Diabetes and The RAAS System

Same as above

[Biochemistry & Metabolism Section I, Q55-60](#)

3. Metformin & Sensing Cellular Energy Levels

Same as above

[Biochemistry & Metabolism, Section I, Q61-65](#)

4. Hormonal Control of Glycogenolysis

<https://www.youtube.com/watch?v=zOTLBGL3WW8>

[Biochemical Foundations Diagnostic Test # 2, Section III, Q79-83](#)

5. Glycogen Synthesis

Same as above

[Biological and Biochemical Foundations Diagnostic Test # 1, Section I, Q39-44](#)

Zoom Workshop F: Bioenergetics; Spectroscopy & Radiochemistry

Sunday March 13 8 PM EST

Passage Topic	Content Video	Q Bank Location
1. Pyruvate Kinase Isoforms	Video link: https://www.youtube.com/watch?v=VBGRzt9I7_s	Med-pathway Free MCAT Exam, Section III, Q121-125
2. Fatty Acid degradation	Same as above	Biochemistry & Metabolism Section I, Q66-69
3. Detecting Botulism with Forster Resonance Energy Transfer	https://www.youtube.com/watch?v=Ygfl3USzytY	Med-pathway Free MCAT Exam, Section I, Q5-9
4. Hyperbilirubinemia & Jaundice	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section IV, Q184-189).
5. Treatment of Grave's Disease with Radiolabeled Iodine	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section IV, Q190-196

Zoom Workshop G: Acid/Base Chemistry & Solubility in Disease

Sunday March 27 PM EST

Passage Topic	Content Video	Q Bank Location
1. pH and Drug Efficacy in Cancer	Video link: https://www.youtube.com/watch?v=7nbOzxdvMaU	Full Length Test, Section III, Q18-22 Chemical & Physical Foundations of Biological Systems #2, Section I, Q26-31
2. Kidney Glutaminase	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section I, Q26-31
3. Role of pH in Cancer Chemotherapy	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section I, Q32-37
4. Treating Glaucoma with Medical Marijuana	https://www.youtube.com/watch?v=ZnbOmRXQK5	Full Length Test, Section I, Q1-4 Chemical & Physical Foundations of Biological Systems #2, Section I, Q38-43
5. Bile Salts & Gallstones	Same as above	Chemical & Physical Foundations of Biological Systems #2, Section I, Q38-43

Zoom Workshop H: Immune System; Vitamins & Cofactors

Sunday April 10 8 PM EST

Passage Topic	Content Video	Q Bank Location
1. Multiple Myeloma and Immunoglobulins	1. https://www.youtube.com/watch?v=I5RDoHmnh6Y	Microbiology & Immunology, Section II, Q50-54
2. Autoimmunity & Thyroid Disorders	Same as above	Full Length Test, Section III, Q6-9
3. Toll Like Receptors & Inflammation	Same as above	Microbiology & Immunology, Section II, Q59-62
4. Relationship between Vitamin B12 & Folate	https://www.youtube.com/watch?v=qlpUdFmtJBE	Biological and Biochemical Foundations Diagnostic Test # 2, Section V, Q127-132
5. Pyruvate Dehydrogenase Complex Deficiency	Same as above	Biological and Biochemical Foundations Diagnostic Test # 1, Section I, Q32-38