

CHEM4402 E2 Study List

| CH | Topic |
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| 17 | Triacylglycerol: physical & chemical characteristics |
| 17 | Triacylglycerol: advantages & disadvantages as energy source |
| 17 | Lipid Digestion |
| 17 | Absorption, packaging & export of lipids & lipoproteins |
| 17 | mobilization of stored lipids: hormonal control & transport |
| 17 | Intracellular fatty acid catabolism: formation of fatty acyl-CoA |
| 17 | Intracellular fatty acid catabolism: transport into the mitochondria |
| 17 | Intracellular fatty acid catabolism: β -oxidation sequence & purpose |
| 17 | biochemical accounting: ATP yields from fatty acids, glucose, NADH, FADH ₂ |
| 17 | Variations on fatty acid (FA) oxidation: unsaturated FA's |
| 17 | Variations on fatty acid (FA) oxidation: odd-numbered FA's |
| 17 | Variations on fatty acid (FA) oxidation: ω -oxidation |
| 17 | Regulation of FA oxidation: key steps & signals |
| 17 | Ketone bodies: compounds, precursors, when & why synthesized, function, disadvantages |
| 18 | protein digestion |
| 18 | amino acid catabolism: transamination |
| 18 | amino acid catabolism: roles of α -ketoglutarate, Glu, pyruvate, Ala, Gln |
| 18 | amino acid catabolism: aminotransferases, glutamate DH, glutamine synthetase, glutaminase |
| 18 | Urea cycle: formation of carbamoyl phosphate |
| 18 | Urea cycle: reactions, intermediates, products |
| 18 | Urea cycle: regulation (short & long term), signals |
| 18 | Urea cycle: relationship to citric acid cycle |
| 18 | amino acid catabolism: carbon skeleton products |
| 18 | amino acid catabolism: glucogenic vs. ketogenic amino acids |
| 18 | Vitamin chemistry: 1- carbon donors |
| 19 | Mitochondrial structure and function |
| 19 | NAD, FAD, Q, cytochromes, Fe-S proteins: properties and functions |
| 19 | electron transport chain: complex I functions |
| 19 | electron transport chain: complex II functions |
| 19 | electron transport chain: complex III functions |
| 19 | electron transport chain: complex IV functions |
| 19 | electron transport chain: fate of e ⁻ 's donated by NADH, FADH ₂ |
| 19 | free energy change associated with electron transport |
| 19 | electron transport, H ⁺ pumping and electrochemical gradients |
| 19 | ATP synthesis: chemiosmotic model |
| 19 | ATP synthesis: ATP synthase (Complex V: structure, function, action) |
| 19 | biochemical accounting: H ⁺ pumped per ATP synthesized |
| 19 | electrochemical gradients & ADP, ATP, P _i transport |
| 19 | malate-aspartate, glycerol 3-phosphate shuttles |
| 19 | regulation of oxidative phosphorylation |
| 19 | Photophosphorylation: electron sources (donors) and final acceptors |
| 19 | chloroplast structure and function |
| 19 | light absorbing pigments: chlorophyll, carotenoids |
| 19 | Plant photosystem II: structure, function & action |
| 19 | Cytochrome b ₆ f complex and plastocyanin |
| 19 | Plant photosystem I: structure, function & action |
| 19 | Ferredoxin and NADP oxidoreductase |
| 19 | water splitting complex: Mn, function and action |
| 19 | ATP synthesis in photophosphorylation |
| 19 | biochemical accounting: ATP synthesis in photophosphorylation |