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Nota di contenuto	""Pain-Free Biochemistry""; ""Contents""; ""Preface""; ""SECTION 1 Foundations""; ""Topic 1 Why biochemistry?""; ""Topic 2 Remarkableness of life""; ""Chemistry I The basic structure of substances: atoms, molecules, elements and compounds""; ""Chemistry II Atomic structure, valency and bonding""; ""Chemistry III Protons, acids, bases, concentration and the pH scale""; ""Topic 3 Shape, molecular recognition and proteins: an example""; ""Topic 4 Proteins: molecular necklaces""; ""Topic 5 Chemical transformations in the living organism: metabolism""; ""Topic 6 Reactions, catalysts and enzymes"" ""Topic 7 Specificity, saturation and active sites"" ""Topic 8 Structure of metabolism: anabolism and catabolism""; ""Chemistry IV Equilibrium""; ""Topic 9 Catabolism: degradation vs energy metabolism""; ""Chemistry V Oxidation and reduction""; ""Topic 10 Oxidation and reduction in metabolism""; ""SECTION 2 Catabolism""; ""Chemistry VI Aldehydes, ketones and sugars""; ""Topic 11 Carbohydrates: sugars and polysaccharides in metabolism""; ""Topic 12 Glucose inside the body""; ""Topic 13 Breakdown of sugar: glycolysis""; ""Topic 14 Aerobic oxidation of pyruvate: Krebs cycle""

""Topic 15 Respiratory chain, oxidative phosphorylation and overall ATP yields""
 ""Topic 16 Mobilising the carbohydrate store: glycogenolysis"";
 ""Chemistry VII Alcohols, esters, glycerol, fatty acids and triglycerides"";
 ""Chemistry VIII Hydrophobic, hydrophilic and amphiphilic""; ""Topic 17 Phospholipids and membranes""; ""Chemistry IX Saturated and unsaturated""; ""Topic 18 Fats as an energy source""; ""Topic 19 Fats: digestion, transport, storage and mobilisation""; ""Topic 20 Fats: oxidation of fatty acids""; ""Topic 21 Ketone bodies in health and disease""
 ""Topic 22 Dietary fat: essential fatty acids""
 ""Topic 23 Protein and amino acid breakdown""; ""Topic 24 Shedding excess amino groups: urea cycle""; ""SECTION 3 Anabolism and Control""; ""Topic 25 Is anabolism just catabolism backwards?""; ""Topic 26 Making new glucose: gluconeogenesis""; ""Topic 27 Fatty acid biosynthesis""; ""Topic 28 Providing reducing power: NADPH and the pentose phosphate pathway""; ""Chemistry X Isotopes""; ""Topic 29 Red cells and white cells: defence against reactive oxygen and reactive oxygen as defence!""; ""Topic 30 The need for metabolic control""
 ""Topic 31 Relationship of fats and carbohydrates: use by different tissues""
 ""SECTION 4 Genes and Protein Synthesis""; ""Topic 32 The idea of genes""; ""Topic 33 The chemistry of genes: DNA and the double helix""; ""Topic 34 The genetic code and mRNA""; ""Topic 35 Protein synthesis, ribosomes and tRNA""; ""Topic 36 Genetic differences and disease""; ""Topic 37 Genetic variability: drug metabolism and disease susceptibility""; ""Topic 38 Mutation, radiation and ageing""; ""Topic 39 Switching genes on and off: development, tissue specificity, adaptation and tolerance""
 ""Topic 40 DNA and protein synthesis as targets: chemotherapy, antibiotics, etc.""

Sommario/riassunto

""It's not every day that one picks up a textbook that can claim to occupy a unique niche, given the multitude of scientific textbooks that are vying for a medical readership. However, with the recent publication of 'Pain-Free Biochemistry: An Essential Guide for the Health Sciences', which is specifically aimed at students of medicine and nursing, one could be left wondering just why nobody thought of this sooner." -Irish Medical Times, September 14, 2010 If you are an undergraduate nursing or healthcare student about to embark on a short course in biochemistry and feel daunted by the prosp
