Cheatography

# A&P Chapter 2 NAHHH Cheat Sheet

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## Anatomy 2.1 abc (A&P Atomic Structure)

| 2.1a MATTER,ELEMENTS,PERIODIC TABLE | | |
|---|---|---|
| Body has= | matter | Matter is present in liquids, gas, and solid |
| Atom composition= | neutron | proton electrons |
| Amu= | Neutron+Proton | |
| Atomic Number= | # of protons | |
| Atomic Mass= | (Atomic Weight)= | Proton & Neutron |
| 2.1b ISOTOPES | | |
| Isotopes= | same Proton & Electrons | different Neutrons |
| Average Atomic Mass= | average isotopes | |
| Physical half-life= | 50% of radioisotope | to become |
| Biological Half-Life= | Half of medicine to be destroyed | |
| 2.1c STABILITY & OCTATE RULE | | |

## Anatomy 2.1 abc (A&P Atomic Structure) (cont)

| Valence Shell= | Exterior Electron Layer | |
|---|---|---|
| Octet Rule= | 8 Valence ELectrons= | stability |

## Anatomy 2.2 ab (Ions)

| 2.2a IONS | | | |
|---|---|---|---|
| Ions= | positive or negative charge | | |
| Cations= | Loss of Electron | Anion= | gain of electron |
| 2.2b IONIC BONDS | | | |
| Ionic Bonds= | Positive+-Negative bond= | Salt structure | |
| Ionic Compound Ex:= | NaCl | | |

## Anatomy 2.3 abcd (Covalent Bonds)

| 2.3 a COVALENT MOLECULES | | |
|---|---|---|
| Covalent Bond= | charge equilibrium | |
| Molecular Formule= | # & type of element | Structural Formula= |
| Isomers= | Same Molecular formula | different structure |
| 2.3 b COVALENT BONDS | | |
| Can have bonds up to: | single | double |

## Anatomy 2.3 abcd (Covalent Bonds) (cont)

| Polarity depends on | Electronegativity | |
|---|---|---|
| Polar= | pull | nonpolar= |
| 2.3 c POLARITY & AMPIPATHIC | | |
| non polar contains= | non polar bonds | polar contain |
| Ampipathic Molecule= | can have both poles | |
| 2.3d ATTRACTION | | |
| Intermolecular attraction= | weak attraction | Ex:= |
| van der Waals forces= | non polar attraction | Occurs momentarily= |

## Anatomy 2.4 abc Water Property

| 2.4 a STRUCTURE | | |
|---|---|---|
| H2O | water molecule ability= | form 4 hydrogen bond with |
| 2.4b PROPERTIES | | |
| Phases= | Lubricates | Cushions |
| Transports | Arrangement | |
| Water has= | Cohesion | Surface Tension |
| High= | Specific Heat | Heat of Vaporization |
| 2.4 c UNIVERSAL SOLVENT | | |
| Water= triple | Solvent | Stuff that gets dissolved= |

## Anatomy 2.4 abc Water Property (cont)

| Hydrophyllic= | dissolves in water | |
|---|---|---|
| Dissolve in water= | but do not remain intact= | dissociate |
| Electrolytes | Dissolve | Conduct Current |
| Non Polar= | does not dissolve= | hydrophobic |
| Partially Bond | Hydrogen | Ampipathic Molecules |
| Dissolve= | | |

## 2.6 ab Water Mixtures

| 2.6 a WATER MIXTURES | | |
|---|---|---|
| Suspension= | Large Solutes | Scatter Light |
| Colloid= | hydrogen bonds | Small Solute | Scatter light |
| Solution= | Smallest Solute | Do not scatter light |
| Emulsion= | Excretes Waste | Polar+-Non-Polar= | form when mixed |
| Adhesion | | |
| 2.6 b SOLUTION CONCENTRATIO | | |
| Mass/Volume = | mg Solute=dL Solutio | |
| Mass/Volume Percent= | Solute | grams/100 mL |




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## 2.6 ab Water Mixtures (cont)

| | |
|---|---|
| Molarity= | Moles solute/L solution |
| Molality= | Moles solute/kg Solvent |
| Osmoles dependent= | dissolves in solution |
| Osmolarity= | # particles in 1 litre solution |
| Osmlality= | # of paritcles in 1 kilogram of water |
| mole= | 6.022X10^23 |
| Molecular Mass= | Add up AMU |

## Anatomy 2.5 abc Acid/Base & pH Buffer

2.5 a WATER=NEUTRAL SOLVENT

| | | | |
|---|---|---|---|
| H2O+ | H2O-> | H3O^++ | OH^- |
| H3O^+= | Hydronuim | OH^-= | Hydroxide Ion |

2.5 b ACIDS & BASES

| | | | |
|---|---|---|---|
| ACid= | Proton Donor | Base= | Proton ACceptor |

2.5 c pH BUFFERS

| | |
|---|---|
| Neutral= | 7 |
| Buffer = | Prevent pH Change |

## 2.7 abcde (Macromolecules)

27a GENERAL CHARACTERISTICS

| | | |
|---|---|---|
| Organic Molecules= | contain carbon | Inorganic molecules= |
| Hydrocarbons= | C-H | |
| Polymers= | Monomers= | Identical chemical Structure |
| Dehydration= | forms | Hydration= |

2.7 LIPIDS

| | | |
|---|---|---|
| Types: Triglycerides | Phospholipids | Steroids |
| Tryglcerides= | energy storage | 14-20 carbon long |
| Fatty Acid: | Saturation= lacks double bond | Unsaturated=possesses double bond |
| Phospholipid membrane= | Hypdrophyllic side | hypdrophobic side |
| Steroid Ring | 4 rings consisting of hydrocarbons | |
| Eicosanoids = | 20 carbon fatty acids= | communicate with nervous system= |

2.7 c CARBS!!!

## 2.7 abcde (Macromolecules) (cont)

| | | |
|---|---|---|
| Glucose-> every other molecule | Glycogenisis-> | Glycogen |
| 6-Carbon Sugars (Hexose)= | Galactose | Fructose |
| 5-Carbon Sugars (Pentose)= | Ribose breakdown | Deoxyribose |
| Disaccharides= | Sucrose | Lactose Maltose |
| Eicosanoids | | |

2.7 NUCLEIC ACIDS

| | | |
|---|---|---|
| Single Ring= | Cytosine | Uracil Thymine |
| Pyrimidines= | polyunsaturated= | |
| Double Ring= Purines= | Adenine | Guanine |
| DNA & RNA | composed of Nucleotides | linked through Covalent Bonds |
| DNA possesses= | deoxyribose sugar | phosphate |
| signaling molecules | | |

## 2.7 abcde (Macromolecules) (cont)

| | | |
|---|---|---|
| Nitrogenous bases= Thymine | (Reversed with Glycogenisis) | adenine guanine |
| RNA posses-sess= | ribose | phosph |
| RNA Nitrogenous Bases= Adenine | Guanine | Cytosir |
| DNA/RNA Differences= | Thymine | 2/1 Strands | Deoxyribose/-Ribose |

2.7 e PROTEINS

| | | |
|---|---|---|
| Protein Functions= Catalysts | defense | Transp |
| Cause Movement | called phospodiester bonds | Perform Regulation | Provide |
| Amino Acids= | Monomers -> | Protein |
| Amino Acids= | 1 of the nitrogenous bases | Covalents Bonded= | Peptide |
| 3-20 Amino Acids= | Oliopeptide | |
| 21-199 Amino Acids= | Polypeptide | |



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## 2.7 abcde (Macromolecules) (cont)

| | | | |
|---|---|---|---|
| 200+ Amino Acids= | Protein | Protein+ Carb= | Glyco protein |

## 2.8 Protein Structure

### 2.8 a AMINO ACIDS

| | | | |
|---|---|---|---|
| Amino Acids groups= Nonpolar | Polar | Charged | special |
| Nonpolar amino acids= | R group= | hydrogen or Hydroc-arbons | groups with nonpolar amino acids |
| polar amino acids | contain R groups | interacts with polar and | water molecules |
| charged amino acids= | Negative have: Glutamate & Aspartate | Positive Charge Have: Histidine, Lysine, arginine | |
| Special Functi-ons:= | Proline, Cysteine, and Methionine | | |

### 2.8 SEQUENCE & PROTEIN CONFORMATION

| | | | |
|---|---|---|---|
| 4 Protein shapes= Primary | Secondary | Tertiary | Quaternary |

## 2.8 Protein Structure (cont)

| | | |
|---|---|---|
| Primary= | Linear Amino ACids | |
| Secondary= | Alpha Helix | Beta Sheet |
| Tertiary Structure= | 3-dime-nsional shape | repeating secondary structure |
| quaternary structure= | 2+ proteins | |
| Denature= | PH change | Temper-ature Change |
| Function= | | |



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