

Biology Mid-Term Exam Study Guide

Chapters 1, 2, 22

- A. homeostasis
- B. nutrients
- C. digestion
- D. transport
- E. respiration
- F. excretion
- G. metabolism
- H. embryo
- I. cleavage
- J. morula
- K. blastula
- L. gastrula
- M. ectoderm
- N. endoderm
- O. mesoderm
- P. differentiation
- Q. monotremes
- R. marsupials

1. Be able to describe 3 characteristics of living things.
2. Be able to name systems in our body that are responsible for carrying out our different life processes.
3. Be able to describe what happens in the early divisions of cleavage.
4. Be able to describe what happens in the later divisions of cleavage.
5. Be able to name 2 parts of our body that develop from the ectoderm, mesoderm, and endoderm, respectively.
6. Be able to name a monotreme, and be able to name a marsupial.

Chapter 3

- A. protons, neutrons, electrons
- B. element
- C. compound
- D. atomic number
- E. atomic mass
- F. isotopes
- G. covalent bond

- H. molecule
- I. ionic bond
- J. ion
- K. diatomic molecule
- L. structural formula
- M. reactants, products
- N. acid, base
- O. neutralization
- P. pH scale

1. Be able to describe the structure of an atom.
2. Be able to draw electron arrangements of covalent compounds, and be able to draw their structural formulas.
3. Be able to balance chemical equations, and label the reactants and products.
4. Be able to explain how water is formed as a product in neutralization reactions.
5. Know the range of the pH scale, know where acids and bases are on the scale, and be able to compare strengths of acids and bases based on their pH values.

Chapter 4

- A. polar molecule
- B. solvent
- C. mono-, di-, and polysaccharides
- D. dehydration synthesis
- E. hydrolysis
- F. lipids: glycerol, fatty acids
- G. saturated, unsaturated fats
- H. proteins, amino acids
- I. peptide bond, di- and polypeptides
- J. nucleic acids: DNA, RNA
- K. nucleotides
- L. double helix
- M. enzymes, catalyst
- N. substrate, active site

1. Be able to name an example of a monosaccharide and name an example of a polysaccharide.
2. Be able to describe the chemical structure of saturated and unsaturated fats, and name an example of each.
3. Be able to describe 2 functions of proteins.

4. Know the full names of DNA and RNA.
5. Be able to name the 3 parts of a nucleotide.
6. Be able to name the nitrogenous bases in nucleic acids, and know how they bond.
7. Be able to describe 2 structural differences between DNA and RNA.
8. Be able to explain how enzymes work.

Chapter 5

- A. prokaryotic cell
- B. eukaryotic cell
- C. cell membrane
- D. selectively permeable
- E. nucleus
- F. cytoplasm
- G. organelles
- H. cytoskeleton
- I. diffusion
- J. concentration gradient
- K. equilibrium
- L. osmosis
- M. isotonic solution
- N. hypotonic solution
- O. hypertonic solution
- P. passive transport
- Q. active transport

1. Be able to describe 2 differences between prokaryotic and eukaryotic cells, and name organisms in which they exist, respectively.

2. Describe a function of each of the following parts of the cell:

- A. cell membrane
- B. nucleus
- C. ribosomes
- D. rough ER
- E. smooth ER
- F. Golgi bodies
- G. lysosomes
- H. mitochondria

3. Describe the structure of each of the following parts of the cell:

- A. rough ER
- B. smooth ER

- C. Golgi bodies
- D. lysosomes
- E. mitochondria

4. Be able to describe what happens to a cell in each of the following solutions: isotonic, hypotonic, and hypertonic
5. Be able to explain the difference between passive and active transport, and describe an example of each.

Chapter 20 Study Guide

1. Know the definitions of the following terms:

- A. cell cycle
- B. mitosis
- C. cytokinesis
- D. chromatin
- E. chromosomes
- F. interphase
- G. replication
- H. centrioles
- I. chromatid
- J. centromere
- K. asters
- L. spindle
- M. growth factors
- N. density-dependent inhibition
- O. cancer cells
- P. tumor
- Q. benign tumor
- R. malignant tumor
- S. metastasis
- T. carcinogens

- 2. Be able to describe chromatin in detail, and know when it is present in cells.
- 3. Be able to describe 3 things that occur during interphase.
- 4. Be able to describe 3 things that occur during prophase.
- 5. Know when the nuclear membrane disappears.
- 6. Be able to describe what happens during metaphase.
- 7. Be able to describe what happens during anaphase.
- 8. Know when telophase begins, and describe 3 things that happen.
- 9. Describe when and how cytokinesis occurs.
- 10. Be able to describe 2 things that may inhibit or stimulate cell division.
- 11. Describe 2 differences between cancer cells and normal cells.
- 12. Name 2 things that may cause cancer.

13. Describe 2 ways in which you may reduce your risk of developing cancer.

14. Name and describe a type of cancer.