BIO 9 - REVIEW FOR EXAM 1

Sp95

SCIENCE (Intro.)

1. List the correct sequence of steps in the scientific method, and apply them to everyday situations.
2. Distinguish between hypothesis, theory, and law; and between biology, anatomy, and physiology.
3. List the characteristics and the levels of organization exhibited by all living organisms.
4. Compare the features and classification of animals, vertebrates, mammals, primates, and humans.

CHEMISTRY (Ch. 1)

1. Identify the structure of atoms, and the differences between the nucleus, proton, neutron, & electron.
2. Identify periodic table, element, atomic number, atomic mass, isotope, molecule, chemical bond, bond energy, acid, base, inorganic and organic molecules, and enzyme.
3. Describe the differences between ionic, covalent, and hydrogen bonds.
4. Identify the 6 elements most important to life; and the physical differences between isotopes.
5. Recognize examples of synthesis and hydrolysis reactions, and describe the role of water in each.
6. Describe the atomic structure, function, and examples of the 4 classes of organic molecules.

CELLS (Ch. 2)

1. Restate the cell theory, & discuss why its size is limited by efficiency and surface area-to-volume.
2. Identify the structure and function of the cytoplasm, cell membrane, cell wall, organelle, cilia, flagella, nucleus, nuclear membrane, nucleoplasm, nucleolus, chromosome, mitochondria, ribosome, endoplasmic reticulum, Golgi body, vesicle, vacuole, lysosome, centriole, and carrier molecule.
3. Discuss the structure of the cell membrane, and how this controls the permeability of molecules.
4. Distinguish diffusion, facilitated diffusion, active transport, osmosis, endocytosis, and ectocytosis.
5. Identify the 2 processes in the cell cycle, and the general differences between mitosis and meiosis.

ANATOMY & INTEGUMENT (Ch. 3)

1. List the 11 body systems, along with their major organs and their general functions.
2. Identify superior, inferior, anterior, posterior, medial, lateral, proximal, distal, superficial, deep.
3. Identify and locate the major organs in the cranial, spinal, thoracic, abdominal, & pelvic cavities.
4. Identify the largest organ in the body [hint: the skin] and its functions, layers, and sense organs.
5. Describe the functions of melanin, carotene, nails, oil gland, sweat gland, hair, and hair muscle.

NUTRITION (Ch. 4)

1. Discuss the role of the sun, photosynthesis, and cell respiration in the energy processes of life.
2. Distinguish metabolism, metabolic rate, basal metabolic rate, calories, and kilocalories.
3. Identify the fuel nutrients and compare their energy content.
4. Discuss the nutrition of sugar, starch, fiber, saturated & unsaturated lipids, fish oil, and protein.
5. Discuss the dietary role and structure of vitamins and minerals, and identify examples of each.
6. Describe an essential nutrient, and how a balanced diet & complimentary proteins can be attained.
7. Discuss how food additives, food contaminants, and food poisoning can enter foods.
8. Distinguish between kwashiorkor, protein-calorie malnutrition, anorexia nervosa, and bulimia.
9. Discuss the barriers preventing successful weight loss, and the role of setpoint & satiety in obesity.

DIGESTIVE SYSTEM (Ch. 4)

1. Discuss how autotrophs, heterotrophs, herbivores, carnivores, and omnivores obtain their energy.
2. Describe and locate ingestion, mechanical and chemical digestion, absorption, and elimination.
3. Identify the function and location of the gastrointestinal tract (mouth, pharynx, esophagus, stomach, small & large intestine) and the accessory organs (liver, gall bladder, pancreas, spleen).
4. Identify the function and location of peristalsis, teeth, salivary glands, tongue, taste buds, uvula, epiglottis, gastric juice, bile, villi, lacteal, appendix, rectum, anus, and coliform bacteria.
5. Describe the causes, symptoms, and treatment for choking, heartburn, belching, vomiting, appendicitis, ulcer, diarrhea, constipation, hemorrhoids, gallstones, and cirrhosis.