

NLN Exam Study Guide

** Review, know structure & function (ie. A & P)**

- A. The Animal Cell
 - 1) The organelles & their function
 - 2) Energy production in the cell
 - 3) Lactic acid/krebs cycle
 - 4) Energy production/source in DM (ie when insulin is not present)
 - 5) meiosis vs. mitosis, haploid vs. diploid state
 - 6) How things get inside & outside a cell?
 - a) osmosis
 - b) Diffusion - facilitated diffusion
 - c) Active transport
 - d) pinocytosis
 - e) sodium pump
 - f) calcium channel/pump
- B. Tissue types (ie. epithelial vs. endothelial)
- C. The skin - structure & function
- D. Types of Joints
 - 1) long bone growth
 - 2) bone growth osteoclasts vs. osteoblasts
 - 3) function of ligaments & tendons
 - 4) muscle contraction - mechanism - minerals ie. Ca^{++}
 - 5) def. of rotation, flexion, extension, rotation in relation to long bones & major joints.
- E. Fetal blood flow
 - 1) Structure of heart
 - 2) Blood flow through heart valves
- F. Adult Heart
 - 1) heart sounds - S1 S2 S3 S4 causes
 - 2) cardiac cycle diastole & systole
 - 3) Basic EKG
 - a) p wave - pr interval
 - b) QRS
 - c) ST Interval
 - d) T wave
 - e) What they relate to in regards to function (ie. depolarization, repolarization)
 - 4)
 - a) Atrial node
 - b) SA node
 - c) bundle of his
 - d) ventricular wave

- e) purkinjie fibers
KNOW WHAT EACH ONE DOES!!
- 5) Nerves -> heart rate up/down, i.e sympathetic vs parasympathetic control
- G. Blood cell types and function
 - 1) RBC - trace origin (ie. stem cells)
 - 2) Platelets
 - 3) WBC (various types)
 - 4) Where is blood formed - the process of hematopoiesis
 - 5) Physiology of blood pressure - maintenance of pressure under shock conditions
 - 6) Veins vs. arteries, structure & function
 - 7) process of clotting - various stages
 - 8) Capillary permeability - control
 - 9) exercise - physiological response - (ie. blood flow, heart rate, response)
 - 10) Plasma proteins - what are they - what is their function
 - 11) Function of lymph system
 - 12) erythropoeitin - production, where?
- H. Chest wall, diaphragm, pleura, structure & function
- I. Lungs: Structure & function
 - 1) Blood gases
 - a) pH, P02, C02
 - b) Cl, acidosis vs alkalosis
 - 2) Hyper vs. hypoventilation - what happens to BG's?
 - 3) Respiratory center - effect of high C02 + low O2
 - 4) Anabolism vs. catabolism - def & function; examples in body on cellular and organ and system level.
- J. Digestive System
 - 1) Structure and function of the whole system and the various organs.
 - 2) def. of endocrine vs. exocrine functions of the digestive organs in particular the:
 - a) salivary glands
 - b) stomach
 - c) gallbladder
 - d) pancreas
 - e) liver
 - 3) know the various digestive enzymes and what they breakdown (ie. pepsin, catylase, etc.
- K. The Endocrine System
 - 1) The pituitary gland
 - a) Anterior
 - b) Posterior
 - c) Hormone secretions
 - 2) Negative feedback system
 - 3) The hormones - their function, where produced & what they act on.
- L. The kidney - structure and function
 - 1) functional unit, the nephron, glommerulus, tubeles etc

- 2) formation of urine
- 3) the constituents of urine
- 4) The GU system - anatomy & structure
- M. Male & Female reproductive anatomy structure
- N. Neurosystem
 - 1) Structure & function
 - a) meninges
 - b) CSF - formation & circulation
 - c) Reflex arc
 - 2) Flight or Fight response - what happens? - the process
 - a) the neurotransmitters
 - b) the muscles
 - c) the organs
 - 3) Part of the Brain
 - 4) Nerve action potential
 - a) movement of ions? - which and what way?
 - b) norpinephene - acetylcholine - cholinesterase - FUNCTION
 - 5) blood osmolarity - where detected
- O. Eye - structure & function
- P. Ear - structure & function
 - 1) auditory branch
 - 2) vestibular branch
- Q. Other senses
 - 1) Various receptors mainly in skin
 - a) chemo receptors
 - b) mecano receptors
 - c) proprioceptors
 - d) thermo receptors
- R. Immune System
 - 1) Structure & function
 - 2) Components
 - a) T Cells
 - b) B Cells
 - 3) Cellular vs. humoral immunity