Note: We believe that not all numbers are important; as most numbers are averages thus not accurate + we think it's mentioned for conception not memorization.
BUT focus on the highlighted ones WE think they're important. Good luck!

-Nouf Almasoud -Moath Aleisa

Physiology of The Bone Lecture:

Cortical bone (compact)	80% of human skeleton
Trabecular bone (spongy)	20% of human skeleton
Normal Ca2+ level in plasma.	8.5-10 mg/dL (Mean 9.4 mg/dL)
Free ionized calcium	50% of total ECF calcium
Protein-bound calcium: 1- Bound to albumin 2- Bound to serum constituents	40% 90% 10%
Phosphate (PO4) in bones	85%
Phosphate (PO4) in cells	15%
Phosphate forms as H2P04, HPO4 in ECF	Less than 1%
Bones is formed of calcium in the percentage of	70%
Calcium of the bones in the form of hydroxyapatite crystal & phosphate salts (CaP04 and hydroxide)	99%
Calcium in bones	99%
Calcium in ECF	0.1%
Calcium in cell organelles	1%
Exchangeable Calcium of bone	0.4 - 1% of total bone

Resting Membrane Potential and Action Potential Lectures:

Value of resting membrane potential	**-70 , -90 mv**
Value of threshold potential	**-50 , -65 mv**
Depolarization ends (Na channels close)	**-35 mv**
K+ equilibrium according to Nernst potential equation. (Inside the cell)	-94 mv
Na+ equilibrium according to Nernst potential Nernst potential equation. (Outside the cell)	+61 mv

All values of these 2 lectures are **IMPORTATNT!!**

Neuromuscular Transmission Lecture:

Numbers of vesicles in axon terminal that contains Ach	300,000 vesicles
Number of Ach molecules in the vesicles	10,000 molecules
Synaptic cleft (space) length	20-30 nm

Physiology of Muscles Contraction Lecture:

Resting membrane potential of muscles	-90 mv "Same as nerve"
Duration of action potential in muscles	1-5 seconds
Conduction velocity	3-5 m/s

Nerve Conduction Studies and EMG Lecture:

Oscilloscope sweep speed	2 ms/cm
Stimulus duration used in 0.2 ms	Stimulus frequency to 1 second
MNCV Distance	284 mm
L1 latency at wrist	3.5 ms
L2 latency at elbow	8.5 ms
Normal value for conduction velocity in arm	-50 , -70 /sec
Normal value for conduction velocity in leg	-50 , -60 m/sec
Amplitude in EMG	300μV(microvolt) , 5mV(millivolts)
Duration in EMG	3 , 15 milliseconds
Abnormalities of MUPs 1-Nerve disease 2-Muscle disease	 5 mv (ginat MUPs) 300μV (small MUPS)

Physiology of Motor Unit Lecture:

Number of muscle fibers per motor neurons: 1-Gastrocnemius 2-Extraocular	 2,000 mucle fibers < 10 muscle fibers

Muscle Adaptation to Exercise Lecture:

Maximal contractile force	3 - 4 kg/cm2
Size of muscles influence "cross sectional area"	150 cm2
Maximal contractile strength	525 kg
Muscles power: First 8 - 10 seconds Next 1 minute Next 30 minutes	 7000 kg-m/min 4000 kg-m/min 1700 kg-m/min
Changes in hypertrophied muscle: In mitochondrial enzymes In stored gycogen In stored triglyceride In oxidation rate	 increase 120% increase 50% increase 75-100% increase 45%
Oxygen consumption VO2 and Pulmonary ventilation in exerside: VO2 at rest	 250 ml/min

Untrained average male Athletically trained average male Male marathon runner	3600 ml/min 4000 ml/min 5100 ml/min
VO2 and VE increased about	20-folds between resting state and maximal intensity
VO2 Max increased about	10% by training
O2 diffusion capacity increased about	3-folds during exercise
Training increased C.O about	40% greater than untrained persons
Enlargement of heart chambers	40% in contrast to nontrained
Cardiac output increases from its resting level about	5.5 L/min to 30 L/min
Stroke volume	Increases "50%" from 105 to 162 milliliters
Heart rate	Increases "270%" from 50 to 185 beats/min
Use of energy during muscle work	20 - 50% of energy released from metabolism
Body temperature during endurance training -Heatstroke-	raises from 98.6° to 102° or 103°F / 37° to 40°C
Body temperature during endurance training (in hot and humid conditions) -Heatstroke-	raises from 106° to 108°F / 41° to 42°C

Factors in Athletic Performance Lecture:

2 high-energy phosphate bonds store	7300 calories
CP system energy phosphate bond has	10,300 calories/mole
Duration of CP system	Fraction of a second
Duration of phosphagen energy system	8-10 seconds
Duration of glycogen-lactic acid system	1.3-1.6 minutes
Moles of ATP/min in phosphagen system	4 moles/8-10 seconds
Moles of ATP/min in Glycogen-lactic acid system	2.5 moles/ 1.3-1.6 minutes
Moles of ATP/min in aerobic system	1 mole/unlimited time
Duration in EMG	3 , 15 milliseconds
Total oxygen dept 1-Stored A) In lungs B) In body fluids C) In Hb D) In muscle myoglobin 2-Consumed in phosphagen and lactic system	11.5L 2L 0.5L 0.25L 1L 0.3L 9.5L
Alactacid oxygen dept	3.5L
Lactic oxygen dept	8L