## chapter1

histology:microscopic anatomy cytology: study of cells phsyciology: study of diseases

^2. begin with subatomic partices: atom molecules macromolecules organelles tissues organs systems organisms 3 two organs in lymphatic and nervous system: lymphatic tonsils/spleen protects from disease nervous brain/-spinal cord direct stimuli 4defin-ehomeostasis range of values where ife exists post increase rateofchange neg reversal trend 4 name and planes transverse horizontal, frontal coronal, saggital front, 5 three body cavities throacic pleura, heart pericardial, lung peritoneal 6 mediastium in pleura cavity seperate left and right lung reduces friction lung expans/re-coils 7diff diagnostic ct computed tomography 3d images of body mri magnetic resonance imagery different organ dstructures^.

## chapter2

1.whattypeofbondisbetweensrRa none sr is cation 4.reactwithoneanother? to become more stable 5.twostrongchem-icabonds ionic, covalent 6.twoweak hydrogen, van der wall 7. oilinwater oil is hydrophobic and nonpolar more attracted to self than water molecules 8. categories of lipids fat oils waxes fattya-cids&glycerides

## chapter3

^1definegeneralendothermic atp creates po4turns into adp 2. eicosanoids response to inflam-mation 1prostaglandin2leutio-triem 3 sterol 6665 estrogen, testosterone, cholesterol, cortiso 4phospholipid phostphateth-atbonds a diglyceride to a nonlipid 1glycolipid 2 lipoprotien 5basic protein primary-aa sequence secondary-pleatedh-elical tertiary-complex folidng quatenary-groups of 3d 6.cofa-ct&coenzyme cof=mineral ce=vitamins 7. denaturization change in structure of enzyme/changeintempPH yes, if not too much damage has been done 8.nucleic acid dna-doubl-ehelix has agct RNA-singestr-angded has u instead of t 9.metabolic turnover removal of chemical structures in a ce 1phospholipids in neuron 2. enzymes in liver 10.phosphory-lation&cellular energy phos is the adding of a phosphate E+adp+po4---atp 11.omega fatty is an unsaturated fatty acid named from the left 13. cellme-mbrane po4==po4c phospholi-pid=backbone protein=transport ch20=ID cholestrol=flexibility^.

## chapter4

^1.cellularrespirationw/ooxygen anaerobic pyruvate can be used or lacticacid--atp for cell funx 2.proteinsynthesis translation--mRna+rhibosomes+trna>protein transcription gene>mrna 3.movementcellmembrane determiedby permeability diffusion is passive process and will move from high c to low con. 4.difftumors benign-cell within repithelium nonthreat malignant spreads invasion deadly 1rapidly divide 2diapedesis into bV 3attack to vessel wall 4reverse diapedisis 5angiogensis 5.diff-erentiationstemcell stem cell=m-esenchymal or daughtercell fxn sc replace damaged tissue-&make new 6.activetransport unequal concentration kkk na+na+na+ needs an ion to move 7. cellular division 1inter-phase-dupedna 2prophase-mvnt chromosome opposite side nucleus 3metaphase-chromo center of nucleus 4anaphase-seperchromoso 5telophase-d-upecytoplasm,cytokensesis 8.epithelial cells 1cellularity 2polarity 3attachement 4regen-eration 9.

## chapter4 (cont)

typesepithelial squamous o protect skin stratified, cuboidal cube absorb/secrete kidney simple, columnar (same) small intes simple^.

## chapter5

2.transitionalepithelium3loc unsual stratified epithelium w/o damage -urina-rybladder, ureters, renal pelvis 3.matrix? extracellular and grand substance of a connective tissue 6.typesofleukocytes monocytes:phagocytes lymphocytes: fluid CT eosinophils,neutrophils,basoph-ils:promoteinflammat 8.satellitecell stem cells that persist in adult skeletal muscle, result smt can repair itself 9.threeprocesses mast cellactivation, inflammation, regeneration 10. typeso-fmuscles straition,icdisc,branch,neuro sk x--ach smooxxx ache/e card---

## chapter6

^1. list4fuxnskin 1protect of tissues/organs 2excretions of salts/water 3storagelipids 4detection of senses vitamind promotes absorp of calcium blood+liver>kidney>actie vit d>gut>ca2+ absorption 2.

## chapter6 (cont)

layersofepidermis 1corneum--thick, thin skin 2lucideum-thick skin palm/sole 3granuloum-superificaltospin 4spinosum-superbasal 5basal-innermost epidermal layer 3.skincancer malignant melanoma,basal,squamous 4.abcd asym,bord,colo,-diameter 5.2fxnegf 1duodenum, salivary glands 2accelerating production of keratin -stimulatin epidermal develop 6.stretch-marks exceeded elastin fibers 7.hairs vellus-peach terminal--coarse 8.sebaceous lubricate skin, waterproofskin,defenseagainstdisease 9.2sweatglands apocrine-secrete productintohairfollicle merocrine-secrete onto skin 10.granulationtissue fibroblast>macrophage>capillary-network cell 12.injuryrepairsequence 1invasionofmasscells 2bloodclotforms 3growthbasal cell 4basal cell adhere to 5phagocytic cell 6healingscab 8.primarysecondaryintention 1w/suturetoptobottom 2w/osuturebottomup^.

## chapter7

## chapter8

1.clubfoot congenitaltalipesequinovarus cx abnormal muscle devleopm tx cast,surgery 2.3typesofjoints norange-synarthorosis-fibriouscartildge-suture some-amp-fibrcart-syndesmasis&symphasysis free-di-synovial-hip 4.3fxn-synovialfluid 1lubrication 2nutrientdistribution 3shockabsorption-cushionjointexposedtoshock 5.sprain/strain sp-ligament torn st-lig stretched 6.bunion&bursa bunion-baseofbigtoe bursa--degenerativejoint disease bursistionoftoeisbunion 7.4typesofsynoviajoint 1hinge-monoaxial-anke 2pivot-mono--radial saddle-bi-carpometacarpal 4ball--socket-triaxial-hip 8.probsivdisc slippeddisc-nucleuspomposis compressed, distortsanularfibrosis, partway vertebral canal herniated disc-nucleuspomposis breaksthru anular fibrosis portrudes vertebralcanal 9.3ligamentseblow 1radialcollateral 2ulnalcol 3anular 10.3lighip 1iliofemoral 2ishiofemora 3pubofemoral 11.diseasesaffectjoint 1rheumatoid arthristis-autoimmuneattacksjointcapsule 2gouty-uricacidinsynovialfluid 3osteoarthritis-degenerativejointdisease.

## chapter9

^1.neurotransmittermuscles achskeletal epinepherine-cardiac/-smooth 2.5fxnskeletalmuscle 1producesskeletalmvm 2maintainsbodypost 3mainbodytemp 4protectsofttissue 5guardsentrancesexits 4.embryonicdevlpmuscletissue stemcell-tissue=myoblastmyoblast-embryonic 5.m/uofmuscletriad 2terminal cisternae 1t-tubule impulses run down ttubule into SR which release ca2+ and contraction begin 7.nebulin-proteinholdfactinstrandtogether titin-keepthick/thinfilamentproperalignment factin-bindedtomyosintoendureusclecontract 8.n/tdescribemusclecont 1achreleased 2polaritychanged 3ca2+released 4cabindtotroponin, change/forceawaytropomyosin, leaveactivesiteopenonactin 5actin-myosinbind 9.twitch-contr/relax treppe-stimulation&increase immediately after refractory period 10. summation-stimb4therefractoryperiodends teatnusmaximumforce 11.cpaffectmusclecontraction -donates phosphate to adp creates atp atp help binds extend/staytogether for a contraction 12.causeparalysis botulism-noach chlostridium botolinum myatheniagravis-noreceptorache chlostridium tetani^.

## chapter10

1.4waysorganizemusclefiber 1parallel-bicepsbrachi 2convergent-pectoralismuscle 3unipennate-extensordigitorium 4bipennate-rectusfemoris 2.3classesoflevers 1vload fulcrum vaf neckexten 2fvlap ankleexten 3fafvl bicep brachiflex 3.6eyemuscles 1inferior down niii 2anterior rectus up NVI 3medial middle nvii 4lateral lateral nvi 5inferior oblique rollupdown niii 6superioroblique rolldownlateral niv 4.herniacauseloc visercal org abnormally protruding thru an opening in muscular wall caux increased force, in pressure, weak cT 3loc inguinal,umbilical,ivdisc 5.retinaculum broad band of ct tendons pass under it hold tendons in place 6.hamstrings bicepfemoris,semimembranous,semitendenous quads vastusmedialis,vintermedialius,lateralis, rectusfemoris rotatorcuff supraspinatus,infraspinatus,teresminor,subscapularis 7.ischemia/hypoxia is-restrict/dec bloodflow to tissue hyp-decrease o2 in tissue 9.organellemitosis centrioles location=olfactory / hippocampus 10.4structuralclassficiationsneurons 1multipolar 2bipolar 3unipolar 4anapolar 11.stepsneuralregneration 1invasion-macrophages 2formofneuraltubebyschwanncells 3regrowthofaxon 12.neurogliaCNS 1ependymalcells-produce csf 2astrocytes-producebbb 3oligodendrocytes-myelin 4microglial-phagocytosis.

1.6typesofbone 1long-femur 2short-scaphoid 3flat-scapulae 4irregular-hyoid 5sesamoid-patella 6sutural-cranial 3.matrix comesfrombonemarrow, called hydroxyapatite 4.spongybone trabeculae 5.twoossification intracartilagenous-bonereplacescartilage intramembranous-bonedevelopsfrommesenchymal/ fibrousct 6.homeostasisblood-calcium parathyroid pth and calitonin help regulate calcitonin-thyroid-inhibit osteoc, stimul osteob (vbcl) pth-parathyroid-opposite 7.6fractures 1transverse-breakshaft 2greenstick-broken,bent 3displaced-misalignment 4spiral-twisted 5potts-twobreak 6cottes-distal displacedhardest 8.rickets&scurvy r-bone malasia looksfinebutflexibl scurvy-lossofbonemass/strength 9.tmj musclespasm>misalginment>pain> musclespasm 10.3sinuses 1frontal 2sphenoid 3ethenoid 1immunology 2lightenskullbone 3humidifier 11.fasle rib ribsnotattachedtosternum 8-12 12.mfpelvis apperance inlet illiac m-narrow, heart shaped, deep f-braod, oval, shallow

## chapter11

2.4ionchannels 1voltagegatedchanne-c-hangetransmembranepotential 2mecha-nicalgatedchannel-changeinphysicaldi-stortionofmembranesurface 3leakchan-nel-alwaysopenbindtospecificfibers 4ligand-bindspecificchemicals 3.3diffbe-tweengradedresponse g /1localized 2rateofchange 3changesacrossmemb-ranepotentia ap/1restingleakchann 2depolariz 3hyperpolar 4.hyperpolar-ization resetting for another ap, cell become neg, two ion mvm 5.summation summing (+)(-)fromdendritestoseeifreac-hesthreshodtostartap @ axon hillock 6.initialsegfx at axon hillock 7.refractory-periodwneuron 8.saltatoryconduction jumping of ap from nodetonode bc no na under myelin occurs @ nodes of ranvier 9.typesofneurons afibers-largest-myelinatedaxon bodyposition bfibers-s-maller myelinated pain cfibers-smalles-tunmyelinated pain 10.chemical&elect-ricalsynapse c-neurotransmitter to sendmessages exneuromuscular jnx e-nosynaptic gap so the ionic flow exthe eye 11.neuromodulator n-modifiesthere-leaseoftheneurotransmitters inhibits release stimulate ca2+ opiods= 1endor-phins 2endomorphins 3dynorphins 4enkephalins substance p.

## chapter12

^1.directandindirect d-ligandb-indstoprotein,protein channe-lopens in-ligandattachestorecep-tor,activatesGprotein,gtp>aden-olatcyclase,atp>cAMPopenspr-oteinchannel 2.3classesneuro-transmitters aminoacid:glycine,-direct,spinalcord neuropept-ide:endomorphines,indirect,hyp-othalamus purine:adenosine,i-ndirect,cortex 3.presynapticin-hi/fac pi:when ca2+is inhibited from gaba releases it lessens the amnt of neurotransmitters pf: when there is aninfluxof ca2+ the amnt of neurttransm is greater 4.spatial-many synapse temporal-onesynapse 6.plexus interwoven networkingofnerves 4componens: root,trunk,divisio-ns,cords adv:overlappingfxn 7.spinalsegmentsbrachialplexus c4-c8,t1 1suprascapularc5-c6 subscapularis 2dorsalc5 thalamus 3longthoracicc5-c7-omohyoid 4pectoralc5,t1 pectoralis 8.segmentslumba-rplexus t12,l1-l4 1femoralthigh 2obtulatoradductorhips 3saphenous pectoralis all L2-l4 9.neuralcircuits 1convergance 2divergance 3serial 4parallel 5reverbation 10.m/umuscle-spindle fxmuscletone -intrafus-ualfibers-gamaefferents-sensor-yneurons 11.

## chapter12 (cont)

meninges -pia mater(bottom) -subarachnoid (space) -arachnoi-d(middle) -dura (top) -epidura(-space) ALLprotectCNS^.