

Aug 19 2014:

- 1.) Muscle of the fauces: palatoglossus and palatopharyngeus
 - Note: All muscles of tongue are supplied by HYPOGLOSSAL NERVE except for palatoglossus which is innervated by pharyngeal plexus
 - glossopharyngeal nerve runs between the palatoglossus and palatopharyngeus muscles
- 2.) Girl has to give a speech so how do you numb #22 without affecting tongue: mental block
- 3.) Which male reproductive cells touch the basement membrane: Sertoli cells
 - Female equivalence: Granulosa cells
- 4.) Amino acid that is purely ketogenic: LEUCINE and LYSINE
- 5.) Anticodon is found on: tRNA
- 6.) The arteries in the pulp are most similar to those in which other organ: cranium/brain
- 7.) Method of action of anti-cancer drug, fluorouracil: aka suicide inhibitor which inhibits thymidylate synthetase
 - Methotrexate inhibits the enzyme preventing the conversion of DHF (dihydrofolate) to THF (tetrahydrofolate)
- 8.) Type of bonds that hold together alpha-helical structure of protein: hydrogen
 - disulfide bond stabilizes the tertiary structure of protein
- 9.) Myasthenia gravis: it attacks acetylcholine receptors at the NMJ via the circulating antibodies, not acetylcholine
- 10.) What embryonic structure gives rise to stomach: Endoderm
- 11.) Hallmark of autoimmune: Hashimoto's
- 12.) How is the nitrogen derived from cysteine excreted as: urea, uric acid, ammonia, and a few others (**did not know**)
- 13.) Question on Howship's lacuna: didn't say osteoclast but "multi-nucleated giant cell" which I think is another term for it
- 14.) Type of epithelium in buccal vestibule: non-keratinized
 - Only the masticatory mucosa (hard palate or free gingiva) is KERATINIZED
- 15.) Salivary gland with highest resting-volume secretion: submandibular gland
- 16.) Difference between shigella and salmonella: Shigella causes dysentery and Salmonella causes typhoid fever; however, they are both gram negative bacteria
 - Note: Typhus is caused by Rickettsia Typhi
 - Rocky Mountain spotted fever caused by Rickettsia Rickettsii
- 17.) What innervates biceps brachii: musculocutaneous

- triceps innervated by radial nerve
- Thumb and wrist innervated by the median nerve
- sensory innervation to thumb: C7

18.)Tumor in anterior root of lung would affect what nerve: vagus

19.)Fusion of roots of neighboring teeth that were once separate: CONCRESCENCE

- Hypercementosis: excessive buildup of cementum on the roots of one or more teeth

20.)How do you dilate the pupil: epinephrine

 21.)Too much acetylcholine: raised heart rate

22.)Type of fungus that wraps around vessels? Ans: Zygomycetes

23.)What type of lipid is not incorporated into membrane: triacylglycerol (I believe you incorporate diacylglycerol, which is made from it)

24.)Which is not part of normal flora: bordatella pertussis (humans are the only known host but I don't think it's a normal bug)

- Bordatella Pertussis can only thrive from its ONLY host--HUMAN and when they inhabit humans, it causes Whooping cough!!!
- For this disease, we need to GIVE a killed **active vaccine** to eradicate this SOB permanently!
- Which part of virus used to make vaccine? Ans: glycoprotein
- Rabies vaccine can still be effective after the human host is infected with the virus
- Salk vaccine is inactivated

25.)Thymus gland comes from: third pharyngeal pouch

- Inferior Thyroid gland also comes from the 3rd pharyngeal pouch
- External acoustic meatus comes from the 1st pharyngeal pouch

26.)Know what happens to all embryological parts of placenta RIGHT AFTER BIRTH (umbilical vein, ductus arteriosus, etc.): Ligamentum venosum came from ductus venosus and ligamentum teres came from umbilical vein

27.)How can a thyroidectomy lead to tetany: hypoparathyroidism from accidental incision

28.)What adducts the scapula: Ans: Rhomboid minor

29.)Root canal on tooth #3... which nerves are you affecting: posterior and middle superior alveolar (MB root is ONLY supplied by latter)

30.)What condition does not present with painless hematuria: kidney stones (always has pain and always has blood in urine)

31.)Most common missing tooth in patient's mouth: only had max lateral as an option – if I saw third molar, I'd have been super screwed

32.)Most significant outcome of thrombosis: infarction

33.) Most common root to have a second canal: mesiofacial of first molar

34.) Most common artery involved in epidural hematoma: middle meningeal artery

- hematoma: A localized swelling that is filled with blood caused by a break in the wall of a blood vessel leading to blood outside the BV
- Middle meningeal artery exits the foramen sponsum

35.) Order of making active calcium: skin, liver, kidney

- 7-hydrocholesterol-->cholecalciferol (in the dermis or epidermis via UV)
- cholecalciferol-->25-hydroxycholecalciferol (at the liver)
- 25-hydroxycholecalciferol-->1,25-dihydrocholecalciferol (at the kidney)

36.) Gomphosis: teeth and alveolar bone

37.) What happens to contacts of teeth as you age: increase in size

38.) Most likely tooth to have 3 cusps: maxillary 2nd molar and in another version, it's mand 2nd PM

39.) Hardest parts of teeth to scale: distal of maxillary first molar and mesial of maxillary first premolar (and in another version, distal of Max Lateral Incisor)

40.) Something about how your body regulates fluoride: I put something about a factor in the duodenum, since everything else gets absorbed there (figured fluoride would too)

- What does fluoride do to bacteria? Ans: Inhibit Enolase

41.) Last tooth to have a root closure: maxillary canine

- tooth erupts after ½ of the root is developed

42.) Tooth that has triangular pulp at CEJ and then ovoid more apical: maxillary central

- Kidney bean shaped at the CEJ: Max 1st PM
- Ribbon Shaped at the CEJ: Mand Central Incisor

43.) Which of the following is NOT a visceral branch of the abdominal aorta? (Celiac, INFERIOR PHRENIC, superior mesenteric, inferior mesenteric); Ans: Inferior Phrenic

44.) Blood cells seen in allergic infection (rash): eosinophils

- When you have a parasite infection which cells would predominate? Eosinophils

45.) Know the plasma oncotic, hydrostatic and all those pressures – had a question about which ones keeps fluid in the cell

- plasma oncotic: pull into the plasma
- plasma hydrostatic: push out of the plasma

46.) Functional unit of thymus: lobule

- Thymus comes from the third pharyngeal pouch

47.) Patient a giant stab wound in right lumbar region: kidney was hit

48.) Maxillary sinus drains to: middle meatus

49.) Case about overweight patient with emphysema, angina and diabetes

50.) Difficulty breathing: due to anti-alpha-1-antitrypsin

- Can be found in smokers who end up having emphysema!

51.) Reason for endocrine condition (diabetes): overweight

52.) What would nitroglycerine treat: angina / "chest pain"

53.) Which of the following is a polysaccharide: maltose, glucose, fructose, ribose, ***starch***

54.) Allows bacteria to stick to teeth: glucosyl transferase

- Dextran (from combining two molecules of Glucose) and Levan (from combining two molecules of Fructose)

55.) Most swallows throughout day occur... Ans: always between meals never during meals or sleeping!!!

56.) Hering-Bruer reflex: stretch reflex; used to prevent over-inflation of the lungs

57.) Most common immunoglobulin in secretions: IgA

58.) Not a part of the thoracic cage: clavicle

59.) Vitamins needed for proper bone development: A & D

- Vit A: help with Enamel development
- Vit C: help with dentin developments

60.) What is the term for bone that invades scar tissue: Fibroplasia

61.) Only type of cellular change that is not premalignant: aplasia

62.) Which is not a criterion for determining cancer staging: ***type of original cell*** other options included: metastases, invasiveness, tumor size,

63.) Person dies in 24 hours after heart attack, what will you see: two good options – a) hyperplasia of muscles + neutrophils or b) lots of granulation tissue (I chose this one) **NOT TRUE...within 24 hrs, we have an increase in neutrophils and coagulation necrosis.** Former is better. The latter occurs within weeks.

64.) What inserts into coronoid process: temporalis

65.) Which is not part of the first brachial arch: I put temporalis, but it's wrong (it is supplied by trigeminal) can't remember other choices-**IT IS WRONG. Temporalis is part of the First branchial arch**

- Muscles of Mastication: stapedius, stylohyoid, post belly of digastric-->second branchial arch
- Stylopharyngeus-->3rd brancial arch
- Pharyngeal/laryngeal musculature-->4th/6th branchial arch

66.) Which is not involved in something with collagen: Vit K or alphaketoglutarate; Ans: Vit K b/c alpha ketoglutarate is the requirement to go for the hydroxylation of proline to hydroxyproline

67.) Substrate for thrombin: fibrinogen

68.) Southern blot identifies: DNA

- Memorize "SNOW DROP"-->Southern, Northern, o, Western; DNA, RNA, o, and Protein (respectively)

69.) Source of methyl group for urea cycle: methionine

- production of carbamoyl phosphate and citrulline takes place INSIDE the mitochondria
- Immediate precursor of urea: arginine
- Fumarate links urea cycle to TCA cycle
- source of nitrogen for urea cycle: carbamoyl phosphate and citrulline

70.) Mandibular primary tooth with facial and lingual cervical ridge: 1st

71.) Drawing a line on cusps of all mandibular molars: curve of spee

- Combination of Curve of Spee (ant to post) and Curve of Wilson (left to right from the lingual approach) makes up the SPHERE OF MONSON
- Curve of spee gives off a concave shape in the mandible and convex shape in the maxilla

72.) Atrophic gastritis: due to B12 deficiency

- Vit B12 and Folate (or Vit B9) Deficiency-->Macrocytic anemia
- Fe deficiency-->Microcytic anemia

73.) Tooth likely to have only one pulp horn: mandibular 1st PM or canine?

74.) What causes striations in ducts: infoldings of membrane to compartmentalize mitochondria

75.) Most variable cell phase: G1

- phase that undergoes DNA replication: S phase

76.) Testlet: chin deviates to one side and dude was slapped in the right face: due to fracture of right condyle

77.) Most likely to do some weirdass increase to GFR: two choices: constriction of efferent arteriorl or dilation of afferent (I chose constriction because of how it was worded, but I guess the first could work too. Read the question and see what it asks)-**CONSTRICKTION of EFFERENT ARTERIOLE and DILATION of AFFERENT ARTERIOLE do actually increase GFR!!**

78.) AIDS patient with ulcer on palate that was cancerous: Kaposi's (dude didn't smoke)

- Kaposi sarcoma is caused by Human Herpes Virus 8

79.) HBA1C measures: glycosylated hemoglobin

80.) Testlet: dude with a tremor has what condition... Parkinson's

81.) Parkinson's Affects what area of the brain: substantia nigra

82.) What neurotransmitter is involved: dopamine

83.) Dude flinches and you nick the dorsal part of tongue: deep lingual artery

84.) Foramen ovale and rotundum found in which bone? Ans: Sphenoid

- In another version, what is not found in the sphenoid bone? Ans: Cartoid Canal (DO NOT PICK OVALE AND ROTUNDUM)

85.) Pain to the TMJ: temporal was the only answer (should have been AURICULO-temporal)

86.) Sodium opens up: sodium-gated voltage channels

87.) Epinephrine increases: pulse rate and contractility (I put one and not the other... oops!)

88.) Apoxia does not cause fatty liver

89.) Sectioning pyramidal pathways (blah blah blah; repeated question where answer is "loss of voluntary control")

90.) Which of the following is not a GAG or has no GAG's – can't remember but answer was obvious (just know the heparin, heparin sulfate, hyaluronate, etc.)

- Hyaluronate (shock absorbing), Chondroitin sulfate (most abundant GAG), heparan sulfate (highly acetylated glucosamine), heparin (most sulfated than heparan sulfate), dermatan sulfate, and keratan sulfate (most heterogenous GAG) are all examples of GAGs

91.) Bacteria most implicated in root caries: actinomyces

- actinomycosis (aka lumpy jaw): common bacterial infection (painful abscesses) of the face and neck caused by *Actinomyces Israelii*

92.) How do you tell mandibular central from lateral: rotation of crown for mand lateral

- How can you tell the difference b/w the two mand central incisor? Ans: mesial cervical line is more incisal than the distal!

93.) Posterior teeth: crowns shorter and roots shorter

94.) What provides taste to dorsal tongue: CN IX via CNX (I went with the first one-**THAT IS CORRECT IF THEY ASK FOR THE POSTERIOR 1/3; ANTERIOR 2/3 is innervated by CN VII (or chorda tympani)**)

- motor innervation of the tongue: CN XII (all other tongue muscles) and CNX (such as palatoglossus)

95.) What transmits pain of teeth: trigeminal spinal tract

96.) Patient had issue with teeth D and E, so which ones are going to be affected: 7 & 8

97.) Acid-fast bacteria: resist the decolorization of the agent

- *Mycobacterium TB* is an example of an acid fast bacteria

98.) Know the difference between Edinger-Westphal Nucleus and Ciliary ganglion

- Edinger-Westphal nucleus: parasympathetic nucleus of CN III
- Ciliary ganglion: postgang parasymp ganglion for CN III

99.) Most common cause of eye infection: chlamydia trachomatis

100.) When canines touch in latero-trusive movement: mutually-protected occlusion

- laterotrusive: working side and mediotrusive: non-working side

101.) Infection on tooth number 19 drains to: I put deep cervical nodes (other options were submental, submandibular and some other weird shit) **I thought both arches drains to the submandibular node--I AGREE!!!!!!**

- tip of the tongue drains to the submental node
- External jugular vein runs with the superficial deep cervical node
- Internal jugular vein runs with the deep cervical node

102.) Curve of spee is in what shape? Concave

- maxilla is convex and mandible is concave
- Sphere of monsoon=curve of spee+curve of wilson!

103.) MI is likely to heal by what method: no clue – **coagulative necrosis??** I put hepaticization **this is for the lung, not heart which is most likely wrong--I THINK FIBROSIS SOUNDS BETTER!!!!**

104.) Sever a nerve as it exits the stylomastoid foramen (facial nerve): paralysis wasn't an answer and can't remember what I put

105.) Parkinson's dude jolts in chair and you hit his cheek... what artery? Buccal artery

106.) Third order neuron pain from teeth goes from what structure to cortex? I put Thalamus (all sensory information gets relayed here)



107.) Medial to the hyoglossus: idk, I put lingual artery but if you see genioglossus, hit that one; CN IX can be true too!

- Lingual nerve and hypoglossal nerve is lateral to hyoglossus!

108.) Fomites: surfaces that harbor microbes

109.) Most common way to get infected: needle stick

110.) Biggest cusp on mandibular second molar: distobuccal; **technically it should be (biggest-->smallest) MB>ML>DL>DB>DL**

111.) Enzymes affect reactions by: lowering activation energy

112.) Rate limiting step of glycolysis: phosphofructokinase-1

113.) When does maxillary first molar finish root formation: 14-16 years (**realistically speaking, it should be 9-10 years** I agree with 9-10 yrs; **root formation is 3-4 years after crown eruption**)

114.) Teeth erupt when 50% of root is completed

115.) Occlusal table accounts for how much of occlusal outline? 50-60%

116.) Most numerous papilla on the tongue: filiform papilla

117.) Most common way oral bacteria metabolize energy: anaerobic respiration

118.) What is the active form of a G-protein? GTP (not GDP)

- inactive G protein: alpha, beta, and gamma subunit+GDP (which is bound to the alpha subunit)
- active G Protein: alpha+GTP (which is bound to the alpha subunit)

119.) Mandibular primate space is located between which teeth? Canine & first molar

- Max primate space: Mesial to Canine

120.) Insulin reacts with what kind of receptor? Tyrosine Kinase

121.) Testlet: lady had a hysterectomy (operation to remove women's uterus) due to malignant cells... what is the likely reason for this? Ans: Leiomyoma (or benign smooth muscle neoplasm)

122.) What does too much xanthine oxidase lead to? Gout

- allopurinol blocks xanthine oxidase from working in the last step of purine catabolism

123.) Movement of glucose into the cells via GLUT-1 receptor is caused by what? Answer: stimulated by insulin

124.) The main mineral in bones is: hydroxyapatite

- Cementum and Bone both have the same percentage of inorganic compound (close to 50%)!!!

125.) What cleaves DNA fragments: endonuclease

126.) Cells held together by hemidesmosomes: stratum basale

- Stratum basale also is the stratum that has the most mitotic activity and where you can find melanocytes

127.) Teeth that are nearly straight in the mouth: old exams say canine, but bucklan taught maxillary premolars-**AGREE WITH THIS STATEMENT; Depending on the presenting answer choices, pick either max/mand canine or max/mand PM, whichever they put there. If they put both, may god help you. Just pick PM.**

- All crowns tilt facially except for mand 2nd PM and mand molars
- All roots tilt distally except for mand post (facially) + max post (lingually)
- All crowns tilt mesially except for max central incisor and mand incisors

128.) HPV causes a cancer of what kind of cells? Nonkeratinized squamous cell carcinoma

- Basal cell carcinoma is the most common skin cancer!!
- Rodent ulcer can lead to Basal Cell Carcinoma
- Basal cell carcinoma is less malignant than squamous cell carcinoma

129.) Condition that affects the liver and the pancreas: hemochromatosis (aka iron overload)

- Overload of copper: Wilson's Disease; affects liver and the brain!

130.) Cells communicate to each other via what type of junctions? Ans: Gap Junction

131.) Anthracosis is the only type of condition (among other lung conditions listed) that do NOT cause cancer

- severe fibrosis of the lung is caused by anthracosis

132.) Which nerve exits through the foramen rotundum? Maxillary nerve

- Mandibular nerve exits out of Foramen ovale

133.) What will you find on microvilli? Ans: Microtubules

134.) What will you not find in the dermis? Meissner's Corpuscles (near epidermis)

- Meissner's Corpuscle: Fine Touch receptors
- Pacinian corpuscle: Pressure receptors
- DENSE IRREGULAR COLLAGENOUS CT

135.) Patient has lots of blood in her nose, what caused this? Epistaxis

136.) What will you find in sublingual glands? I put myoepithelial cells, but can't remember the question fully

- myoepithelial cells: help in expelling secretions from the lumen of secretory units and facilitate the movement of saliva in salivary ducts

137.) What best describes an opsonized bacteria? It can be better phagocytosed by the immune system

138.) Polyenes are selective for fungi in what way? They bind to something in the fungal membrane (**Ergosterol**) that isn't in bacteria; Eg. Amphotericin B

139.) What makes up the floor of the mouth? Geniohyoid

140.) In right laterotrusive movement, where does the buccal cusp of the first mand premolar go? Facial embrasure between max premolar and canine

141.) Where does the maxillary canine occlude? It passes the mandibular canine and first premolar

142.) Testlet: patient has patchy spots on mouth that rub off, what does he have? Answer: fungal infection

143.) 20 year old patient has a primary mandibular first molar below the plane of occlusion... most likely reason? Congenitally missing permanent tooth (should have gotten than molar when he/she was 6 and primary teeth are always smaller than their permanent counterparts)

144.) What is the size difference between primary teeth and their permanent counterparts? Ans: 2-4mm smaller

145.) Which teeth come in with their roots to the facial and crowns to the lingual? a) mandibular centrals and b) mandibular molars; Ans: Mand molars

- all teeth tilts facially except for mand 2nd PM and mand molar
- all teeth tilts mesially except for max central and mand central and lateral incisors

- all roots tilts distally except mand post (which tilts facially) and max post (which tilts linguinally except for the DB root)

146.) What is the shape of all anterior teeth from the proximal? Triangular

147.) How are disaccharides carried throughout the body? Chylomicrons

- VLDLs pick up endogenous triglycerides and cholesterol from the liver, and send the triglycerides to fat and muscles

148.) What is the complimentary strand of GAU? CUA (other option was AUC, so I wasn't sure if I was supposed to reverse it...) **SILLY RABBIT, look at the prime number!!**

149.) A delayed reaction to a deactivated TB toxin is due to what kind of reaction? (basically asking what kind of reaction the PPD test is) – it's a Type IV HS reaction and you'll see t-cells and stuff. Can't remember the answer but it was straight forward as long you don't let the question throw you off---**DELAYED HYPERSENSITIVITY=TYPE IV!!!**

150.) Which is not a part of the sphenoid bone? Carotid canal (part of the temporal bone)

- DO NOT PICK THE ONE WITH OVALE AND ROTUNDUM b/c they are part of the sphenoid bone!!!!!!

151.) Most common place to find lung cancer: bronchiolar epithelium

152.) What is left in the lungs after maximal expiration? Residual volume

153.) Tooth that commonly requires separate MO and DO restorations? Mandibular first premolar

154.) Mandibular canine appears longer than maxillary because? It is narrower mesio-distally

155.) In Class II malocclusion, which teeth will tooth #26 hit in protrusion? 7 and 8

156.) What muscle enlarges due to bruxism? Buccinator, medial pterygoid, lateral pterygoid;
Ans: Buccinator (only if Masseter is not an option)

157.) What embryonic structure gives rise to the mandible? Meckel's cartilage

- meckel's cartilage came from the first branchial arch

158.) Something about tongue with ventral-dorsal groove and what caused it... I said lateral lingual swellings since it was the only developmental thing that made sense--**I AGREE. They are formed on each sides of the tuberculum impar**

159.) Where does N-glycosylation first occur in the cell? Endoplasmic reticulum

160.) What makes rabies vaccine unique? It is usually given after the symptoms have arrived.

Rabies vaccine is still effective when the person gets infected with the virus rabies

- Negri bodies are found in the cytoplasm of nerve cells carrying rabies!

161.) Hemophilia A is due to a deficiency in which part of the clotting cascade? Factor VIII

162.) What is common to all mandibular teeth? Inconspicuous cingula

163.) Contact area of maxillary lateral incisor on the mesial aspect? Junction of the middle and incisal thirds

164.) What happens to volume of RBC in a hypotonic solution? Its volume increases (b/c of osmosis)

165.) What is common to all anemias? Decreased Ability to deliver oxygen to the tissues

166.) Which of the following is only active after metabolic activity? Procarcinogen: a chemical substance that becomes carcinogenic only after it is altered by metabolic processes.

167.) What makes up the majority of extracellular fluid? Interstitial fluid

168.) What comes right after the end of the terminal bronchioles? Respiratory bronchioles (after this, we enter, the alveoli which remains simple cuboidal like the respiratory bronchiole)

169.) Testlet: AIDS patient taking antifungal drug – what kind of infection is it for? An opportunistic infection

170.) In the absence of pressure, transitional epithelium can be best described as? Dome-shaped

171.) Sensory nerve involved in very bad gag reflex? Glossopharyngeal

172.) Testlet – patient with lots of erosion on lingual of teeth... what is the reason? Bulimia

173.) Epithelium that is unorganized but not invasive? Dysplastic

- Carcinoma in situ is the most severe dysplasia where it covers the whole epithelium BUT HAVE NOT INVADED INTO THE DERMIS!

174.) Each of the following nerves is associated with the cavernous sinus except? Ans: Optic nerve for one version and facial nerve for another version

- THINK of “OTOMCAT”-->Oculomotor, Trochlear, Ophthalmic nerve, Maxillary branch of trigeminal nerve, internal carotid, and Abducen nerve

175.) What is meant by the isoelectric point of a molecule? Net charge of zero

176.) An excess of adrenal cortex hormones leads to what? Cushing's (it means excess ACTH excess cortisol)

- Excess ACTH leads to weight gain and hyperglycemic!

177.) What is the method of action of tetracycline? Inhibits protein synthesis

- Note: Tetracycline are associated with staining of teeth during their calcification

178.) Only tooth that is narrower lingually than facially? Maxillary 1st PM

179.) What is biotin needed for? Pyruvate Carboxylase

180.) Which tooth has an incisocervical developmental groove? 7 or 10

181.) What is the correct ordering of the size of cusps on a mandibular first premolar? Facial > ML > DL

182.) What cellular change always precedes a neoplastic change? Dysplasia

183.) Which of the following does not involve a change in the number of cells? Aplasia

184.) What are all the possibilities of mandibular canine root configuration?

a. **One root; one canal**

b. Two roots; two canals

c. Two roots; facial & lingual

- Mandibular canine is one of the mandibular teeth that have bifurcated roots (Facial and Lingual)

185.) As viewed from the lingual, the lingual cusp of the maxillary first premolar inclines...?
Mesially

- Maxillary first PM have a mesial marginal ridge developmental groove
- Mandibular 1st PM have a ML developmental groove
- Max 1st PM's buccal cusp offset to the distal (long MI and short DI angle)

186.) What does an increase in ADH cause? Increase in sodium retention

- ADH is only active against distal tubules collecting ducts; adjust blood volume/pressure
- Aldosterone is active on the rest of the tubules; adjust Na⁺ ions

187.) Maxillary premolars compared to mandibular premolars? More alike than mandibulars

- Max 1st PM and Max 2nd PM's cusps are approximately equal in size
- Max 1st PM is the only PM among the max and mand to have two roots.
- Mand 2nd PM is the only PM to have a central pit
- Max 1st PM have a hexagonal occlusal shape and Max 2nd PM have a hexagonal or oval occlusal outline
- Mand 1st PM have a diamond occlusal shape and Mand 2nd PM have a square or pentagon shape
- Max 1st PM's MB cusp ridge is longer than its DB cusp ridge; this does not happen for all the other PM including the mand PMs
- Max 1st PM ML cusp ridge is shorter than its DL cusp ridge, which makes the lingual look tilted to the mesial
- Max 2nd PM have a shorter central groove and more supplemental grooves than Max 1st PM
- Max 1st PM's root cross section at the CEJ is a kidney bean shape

188.) What do active transport and facilitated diffusion have in common? Both use a carrier protein

189.) Graves Disease has what features of TSH, T3 and T4? High T3 and T4 but low TSH

190.) Vaccine given for a toxin: toxoid

- toxoid: contains inactivated exotoxin; present in tetanus and diphtheria vaccines

- 191.) Most likely result of esophageal varices: hematemesis
- 192.) Premolar likely to have 3 pits: mandibular second (can have 3-cusps)
- 193.) Nucleoside analogues used to treat: hepatitis viruses
- 194.) Most common cause of liver cirrhosis: alcoholism
- 195.) Testlet: patient with abscess near maxillary second molar... goal of treatment? Treat tooth #15
- 196.) Increase in vertical overlap: options a) teeth may have steeper (or taller) cusps & b) teeth should have steeper cusps (**I said a**)
- 197.) What is found in gram negative but not gram positive? Lipopolysaccharide (aka ENDOTOXIN)
 - NOTE: Gram Positive bacteria have lipoteichoic acid
- 198.) What feeds to the alveolus of the lungs? I put bronchiole circulation... can't remember other options-**RESPIRATORY BRONCHIOLE IS THE LAST BRANCH B/F WE ENTER THE ALVEOLI CIRCULATION**
- 199.) What innervates the diaphragm? Phrenic nerve
- 200.) Sympathetic chain is found? Answer: I chose the one with thorax and lumbar in it since it is called "thoracolumbar"--**I AGREE WITH THIS!**
- 201.) Prevents TMJ from overly yawning: chose collateral ligaments, but sphenomandibular was another good choice-**Temporomandibular ligaments!!!**
- 202.) Most potent chemotactic complement protein? C5a
- 203.) Testlet – patient has woven bone, so how long ago was the fracture? 3 months / 12 – 14 weeks
- 204.) What is hardest to differentiate in a primary central incisor? I put apical foramen... can't remember other choices
- 205.) Increase in 2,3-DPG leads to what in RBC? Less affinity for oxygen
- 206.) Most common bacteria in osteomyelitis? Staph aureus
- 207.) Enzyme found in tears, saliva and eggs? Lysozyme
- 208.) Atherosclerotic plaques in the kidney arteries will lead to what? Secondary hypertension
- 209.) When doing an amalgam on the first molar, you must create what? Central groove interrupted by oblique ridge
- 210.) Hardest part to scale on a first molar? Mesial, **Distal** and Furcation (lingual and buccal were included in other combos)

211.) Structures that are commonly seen in Parkinsons? Lewy Bodies

- Lewy Bodies: abnormal aggregates of protein that develop inside nerve cells in Parkinson's disease
- Russell's bodies (located inside a distended ER) and bence jones are found in ppl w/ multiple myeloma
- Mallory bodies are found in the cytoplasm of liver cells of ppl with liver related diseases (such as alcohol induced, wilson's syndrome, hepatocellular carcinoma; NOTE: not responsible for hepatic failure)
- Negri bodies are found in the cytoplasm of nerve cells carrying rabies!

212.) Indirect way of measuring energy of humans? Oxygen consumption

213.) What lines the ventricles of the brain? Ependyma

- Ependyma lines the CSF-filled ventricles in the brain and the central canal of the spinal cord. They are involved with the production of CSF. Choroid plexus is the one that produces CSF.

214.) Girl on birth control will have what abnormal finding in blood? Low LH (since there would be low GnRH)

215.) Which vitamin deficiency has diarrhea, dementia, dermatitis and death? Niacin or Vit B3

When swallowing, teeth is in intercuspal position (aka Normal occlusion)

Central chemoreceptors are sensitive to PCO₂, not to PO₂ b/c of CSF whereas peripheral chemoreceptor (eg. aortic and carotid bodies) are sensitive to PCO₂ and PO₂

- aortic body: afferent to CNS in CN X and test oxygen going to the body
- carotid body: afferent to CNS in CN IX and test oxygen to the body
- aortic and carotid **sinuses** respond to blood pressure whereas aortic and carotid **bodies** respond to oxygen and different gas concentrations

when gland have serous demilunes, they can produce both serous and mucus secretion

Both Afferent and Efferent: Lymph Node; Efferent: spleen or thymus

Difference btn juxtaglomerular nephrons and cortical nephrons? Ans: length of the thin portion of the henle

- JGA near the surface of the kidney whereas cortical near the border of medulla and cortex

Mandibles are formed via intramembranous ossification whereas the condyle is formed via endochondrial ossification

Two median nasal process makes the PRIMARY PALATE

Two maxillary process or lateral palatine process makes the SECONDARY PALATE

Failure of fusion of medial nasal prominence with maxillary prominence-->**CLEFT LIPS**

Failure of fusion of primary and secondary palate-->**CLEFT PALATE**

Scleroderma is a causative factor of Trismus, which is the reduced opening of the jaw (most reduced opening 30 mm)

Which of the following is NOT a visceral branch of the abdominal aorta? Ans: Inferior phrenic

San joaquin Valley fever: caused by Coccidioidomycosis (a fungi)

Herpangina: mouth blisters caused by the coxsackievirus

Lyme Disease caused by borrelia burgdorferi (a spirochete)

Fungal infection developed in ppl with poorly controlled diabetes: Mucormycosis (a saprophytic mold not DIMORPHIC)

Aspergillus is the fungus that is involved with cerebral infarction

Mosquitoes carry Plasmodium Falciparum

Toxoplasma is travelled in cat feces or uncooked meats

Histoplasma have yeast cells located within host macrophages!

CNS infection with insect vector is caused by Rickettsiae

- Rickettsia Typhi causes Typhus!

St Louis Disease Encephalitis: transmitted to humans by mosquitoes; affect most ppl in the North America

Which is not a characteristic of Neisseria? Ans: Enterotoxin

Ca²⁺ is need the most during which trimester? Ans: First trimester b/c of bone and teeth formation

As someone ages, angle classification goes from class I to Class III

Ligamentum venosum came from ductus venosus and ligamentum teres came from umbilical vein

Gardener's Syndrome is the most common autosomal dominant disease with the presence of multiple polyps in the colon

Mid shaft fracture of humerus affects what nerve? Ans: Radial nerve b/c radial nerve runs under the humerus and over the radius!

- Radial nerve innervates the triceps and Musculocutaneous innervates the biceps and the Median nerve innervates the thumb and wrist!
- sensory innervation to the thumb: C7

What would you see in a deep fungal infection? Ans: Granulomatous lesion

Mucormycosis is an opportunistic infection whereas Histoplasmosis is a disease caused by the fungus *Histoplasma capsulatum* and is common among AIDS patients b/c of their suppressed immunity and resembles granulomatous TB like infections

What would you use to treat a ringworm (Tricho-) infection? Ans: Griseofulvin

Which Antibiotic used to prevent RNA polymerase from binding to DNA? Ans: Rifampacin

Typhus is spread by fleas which are infected with the Rickettsiae bacteria (Rickettsiae Typhi to be specific)

Typhoid fever is caused by *Salmonella*

Granuloma Inguinale is a bacterial disease caused by *Klebsiella granulomatis* characterized by ulcerative genital lesions

Cryptococcus neoformans (a fungi) and *Strept Pneumonae* have what in common? Ans: large polysaccharide capsules

Fungus grows in Sabouraud medium!!

Streptococcus Pneumonia have a capsular polysaccharide

Striated Ducts are found in salivary gland and they are very similar to proximal tubules in the kidney!!!!

- Salivary glands have STRATIFIED CUBOIDAL EPITHELIUM
- Note that striated ducts are NOT found in pancreas!!!

Which medication stops the synthesis of ergosterol? Ans: AZOLE

Which commonly causes traveler's diarrhea? Ans: E. Coli

Medial rotator of glenohumeral joint: Teres Major which is innervated by the lower subscapular nerve

Ppl w/ Emphysema is also called pink puffers and ppl w/ bronchitis are called blue bloaters

- Smoking knocks out the alpha-1 anti-trypsin!

Distinguishing features of jejunum: plicae circulares

- Which of the following is not absorbed in the jejunum? Ans: Dissaccharides, AA, bile, lipids, and water

Neurotransmitter for umami: Glutamate

Where does the thoracoacromial artery branch off of? Ans: Axillary artery

- Mnemonic for axillary artery branches: "Screw The Lawyers, Save A Patient"-->Superior thoracic artery, thoracoacromial artery, lateral thoracic artery, subscapular, anterior circumflex humeral, and posterior circumflex humeral

Ulnar nerve is most vulnerable at the elbow

Where is a direct inguinal hernia found? Ans: Medial to the inferior epigastric vessels

What lines the **non**-articulating surfaces of the TMJ? synovial membrane

- articulating surfaces of the TMJ is lined by fibrocartilage NOT HYALINE CARTILAGE

Each of the following (virus, rickettsia, plasmodia, mycobacteria and chlamydia) is an intracellular obligate except Listeria monocytogenes (and in another version, it's gonorrhoea)

Fungi that exist in dimorphism are: Coccidioides immitis, Paracoccidioides brasiliensis, Candida albicans, Ustilago maydis, blastomyces dermatitidis, Histoplasma capsulatum, and Sporothrix schenckii

which fungus affects hair, skin, and nails? Ans: dermatophytes

Trichophyton causes ATHLETE's FOOT

Somatomedins are hormones that promote cell growth and division in response to stimulation by GH

koplick spot are prodromal spots of measles (aka RUBEOLA) before the real rash appears

Insulin interacts with a tyrosine kinase receptor

Lipids are carried in the lymphatic system via chylomicrons

- VLDLs pick up endogenous triglycerides and cholesterol from the liver, and send the triglycerides to fat and muscles

Enamel is derived from ectoderm, whereas the other (dentin, pulp, cementum, bone, and PDL) are derived from ectomesenchyme or mesoderm

Substance P is a neurotransmitter involved in pain

Dermis may be classified as DENSE IRREGULAR COLLAGENOUS CT

- You would not find Meissner's Corpuscles in the dermis; they are found in the epidermis

Bilaminar (aka retrodiscal) zone of the articular disc of the TMJ is the MOST VASCULAR portion

Biceps brachii is INNERVATED by musculocutaneous nerve and triceps are innervated by radial nerve

- thumb is innervated by the median nerve
- sensory innervation to the middle finger: median nerve

Rodent ulcer (aka Jacobi ulcer) can lead to Basal cell carcinoma

- basal cell carcinoma is the most common skin cancer

Wasserman test is an antibody test for Syphilis

Weil Felix test: test used to diagnose for rickettsia infection

Amino acid used in urea cycle is aspartic acid

- source for nitrogen: carbamoyl phosphate and aspartate

Ketogenic Amino acids are LEUCINE and LYSINE and KETOGENIC & GLUCOGENIC COMBO amino acids are Phe, Tyr, Trp, Iso, Thr and Glucogenic Amino acid are the rest of the ones that I didn't label

Hunter Schreger bands are **enamel** prism arranged in layers at right angles to each other that are used to strengthen enamel and to prevent cracking. Can only see these with reflected light. Most prevalent on cusp tips and incisal edges (where occlusal force is the highest!!)

Dentin:

- By time of formation, we have MANTLE DENTIN (first to form), CIRCUMPULPAL DENTIN (rest of the dentin that is forming until tooth formation is complete), REPARATIVE DENTIN (form in response to trauma), SCLEROTIC DENTIN (result from calcified dentinal tubules that help to prevent pulpal irritation)
- By root completion, we have PRIMARY DENTIN (formed b/f root completion and MOST REGULAR), SECONDARY DENTIN (formed after root completion but not in response to trauma), TERTIARY DENTIN (formed in response to trauma and tubules are LEAST regular)
- By proximity to dentinal tubules, we have PERITUBULAR or INTRATUBULAR (HYPERMINERALIZED), INTERTUBULAR (HYPOMINERALIZED; BULK OF DENTIN FORMED), INTERGLOBULAR (HYPOMINERALIZED)

Gemination: two teeth developed from one tooth bud-->a fused tooth with 1 root and 1 pulp

Fusion: two teeth developed from two separate tooth buds→ a fused tooth with 1 root and 2 pulps

Biceps Brachii is the supinator of the arm (moving the arm outward), which is innervated by the musculocutaneous nerve

- Triceps innervated by the radial nerve and the thumb is innervated by the median nerve

Hypothyroidism causes POSITIVE NITROGEN BALANCE b/c hypothyroidism increases muscle mass and hence more nitrogen intake

IJV becomes sigmoid sinus at jugular foramen

- In reality: Inferior petrosal+sigmoid sinus-->IJV-->exits out of the jugular foramen**

All of the following exits the jugular foramen except for? Ans: CN XII

- CN IX, X, and XI exits the jugular foramen!

Ventral of the neural tube becomes the motor neuron

superior thyroid artery of the external carotid artery branches around hyoid bone

Filiform papillae have no taste buds and the most abundant!!

Combination of Curve of Spee (ant to post) and Curve of Wilson (left to right from the lingual approach) makes up the SPHERE OF MONSON

Centroacinar cells of the pancreas are involved with BICARBONATE RELEASE

Rubella is congenital

Sphingomyelin: FA+ sphingosine+Choline; Lecithins: FA+Glycerol+Choline; Cephalins: FA+Glycerol+Serine (or 2-ethanolamine)

Crypt of Lieberkühn is found in the lamina propria of small intestine and colon

Triceps are the extensor muscles which are innervated by the radial nerve

- biceps are innervated by the musculocutaneous nerve; thumb is innervated by the median nerve

Know all of the TMJ ligaments

- What holds the articular disc in place? Ans: TMJ Ligament
- Temporomandibular ligaments (aka LATERAL LIGAMENTS): prevent moving upward; MOST IMPORTANT LIGAMENT!!!!!!; run from the articular eminence to condyle
- Sphenomandibular ligament: prevent moving downward; attached to the lingula of the mandible
- Stylomandibular ligament: limit excessive movement; attached to the angle of the mandible
- Collateral ligaments (aka discal ligaments) arise from the periphery of the disc and attach to the medial and lateral borders of the condyle. They are used to stabilize the disc on top of the condyle and resist movement of the disc away from condyle during fcn. They are made of collagenous CT and do not stretch.
- Superior belly of the lateral pterygoid (bind to the disk to condyle) assist in stabilizing the position of the articular disk during closing
- Inferior belly of the lateral pterygoid (lateral plate to the neck of condyle) is involved with the slight depression of the mandible (or opening of the jaw)
- Sphenomandibular ligament is the most damaged ligament during a IAN block!
- Articular surfaces of TMJ is made up of FIBROCARTILAGE not hyaline cartilage
 - non-articular surfaces of TMJ is made up of synovial membrane
- Translation for the upper compartment and rotational for the lower compartment
 - Posselt's envelope is the COMPLETE OPP: Rotate then translate!!!
- Retrodiscal tissue (aka bilaminar zone) is the component of the TMJ that has the most vasculature and innervation
- Retrodiscal tissue is the kind of tissue that is attached to the posterior articular disk
- What kind of tissue is attached to the anterior band of the articular disk? Ans: Contiguous with the capsular ligament, condyle, and the superior belly of the lateral pterygoid muscle

Know all of the purine bullshit and the kinase and GProtein bullshit

- Purine starts with R5P produced from Hexose Monophosphate Shunt (or Pentose phosphate pathway) and w/ an ATP, we arrived at PRPP; After amino transfer via PRPP amidotransferase and donation of carbon via THF and ATP, we arrived at IMP (or Inosine monophosphate) which further gets converted to AMP or GMP
- xanthine oxidase is the step of purine catabolism; allopurinol, the drug, blocks xanthine oxidase to prevent gout!
- inactive G protein: alpha, beta, and gamma subunit+GDP (which is bound to the alpha subunit)
- active G Protein: alpha+GTP (which is bound to the alpha subunit)

Origin and insertion of the pterygomandibular raphe: superiorly to the hamulus of the medial pterygoid plate and inferiorly to the posterior end of the mylohyoid line of the mandible

Russell's bodies (located inside a distended ER) and bence jones are found in ppl w/ multiple myeloma

Lewy's bodies: proteins found inside the nerve cells of ppl with Parkinson's Disease

Mallory bodies are found in the cytoplasm of liver cells of ppl with liver related diseases (such as alcohol induced, wilson's syndrome, hepatocellular carcinoma; NOTE: not responsible for hepatic failure

Negri bodies are found in the cytoplasm of nerve cells carrying rabies!

Na⁺ and Cl⁻ are NOT found in saliva

- Why is saliva from parotid gland hypotonic? Ans: Water resorption, and ion secretion takes place in the striated ducts, to make saliva hypotonic
- Submandibular gland is responsible for the greatest amount of saliva secretion

Cystic Fibrosis is an autosomal disease where the person loses two copies of CTFR protein that controls the water and Cl⁻ ions in and out of the cell inside of the lung!

Proximal Tubules waste the most energy in the kidney and uses the most ATP

Know all of the Tooth development: IEE, OEE, Enamel organ, dental papilla, and all those bullshit

- as we age, the dental pulp decreases in size, loses cellularity, and gain more collagen.
- HAP: Ca₅(PO₄)₃(OH)
- Enamel is not derived from neural crest
- ENAM mutation is autosomal dominant
- AMELX mutation is X-Linked
- ENAM and AMELX mutation lead to the dentinogenesis imperfecta
- Vit A is involved with enamel development and Vit C is involved with dentin formation b/c of collagen
- Oral Mucosa DO NOT have stratum granulosum, lucidum, and corneum; note: stratum lucidum is only present in THICK SKIN
- Contour line of Owen in dentin=line of Retzius in enamel
- Odontogenesis:
 - starts at week 6 in utero where ectomesenchyme induces the ectoderm or oral epithelium to form a dental lamina
 - Proceed on to Bud>Cap>Bell>Appositional>Eruption
 - Bud: dental lamina and dental papilla proliferating-->creating a tooth bud!
 - Cap: Enamel organ is formed (with an OEE, IEE, cervical loop [merging of the IEE and OEE], stellate reticulum [between OEE and IEE] and enamel knot [densely packed cells of the stellate reticulum near the IEE]), dental papilla, dental follicle (or dental sac) that surrounds the enamel organ, and succedaneous dental lamina
 - Bell: Everything the same as Cap stage but have an extra stratum intermedium and the disappearance of enamel knots and the disintegrations of the dental lamina with some remnants that are known as epithelial rest of Serres; cells of IEE become tall and columnar

- (differentiation of ameloblasts) and then cells of the dental papilla closest to the IEE becomes tall and columnar (differentiation of odontoblast)
- Appositional: REE is formed when stellate reticulum collapse; odontoblasts secrete dentin matrix first (and mineralized inward from DEJ) and ameloblasts secrete enamel matrix (and mineralized outward from DEJ); NOTE: this is opp of the differentiation of ameloblast and odontoblast
 - root formation begins:
 - start at the cervical loop; as the cervical loop elongates, HERS is formed-->formation of the dental root
 - As radicular dentin is formed, HERS begins to disintegrate leaving behind a remnant of epithelial cells frm HERS called epithelial rests of Malassez
 - Dental **papilla** forms pulp tissue
 - Dental follicle (or dental sac) forms cementum, alveolar bone, and PDL
 - Eruption: As the tooth erupts, the REE fuses with the oral epithelium forming the dentogingival junction (aka epithelial attachment)

Quinolones have an effect on nucleic acid synthesis by inhibiting it!

- **quinolones inhibit topoisomerase**
- **fluoroquinolone inhibit gyrase**
- **rifampin inhibit RNA polymerase**

Stratum Lucidum is found in THICK SKIN only; stratum basale is the site of HIGHEST mitotic activity and where you can find melanocyte; stratum granulosum contains KERATOHYALIN granules

- stratum lucidum is not found in oral mucosa

Acid phosphatase is marker for prostate cancer and alkaline phosphatase is a marker for bone related diseases; Alpha feta protein is a marker for liver cancer

Nutmeg liver is another name for Congestive hepatopathy that is caused by venous congestion from RHF or CHF

Host responses against encapsulated Strept pneumoniae are chiefly mediated by OPSONINS

Tight junction (aka ZONULA OCCLUDENS) completely seals off the intracellular space; Intermediate junction (aka ZONULA ADHERENS) leaves a 15-20 nm wide intracellular space btn adjacent cells; Desmosomes (aka MACULA ADHERENS) provides strong but localized adhesions btn adj cells

- gap junctions allow communication between cells

Hassall's corpuscles are characteristic in THYMUS

- Functional unit of thymus: lobule
- Thymus comes from the third pharyngeal pouch

Pancreas come from ENDODERM and Spleen comes from MESODERM

Owl's eyes can be found in lung pneumocyte caused by CMV, in Reed-Sternberg cells of ppl with Hodgkin Lymphoma, and Lentiform nucleus of basal ganglia of ppl with cerebral hypoxia

Biotin (or Vit H) is involved with all the reactions that uses a “carboxylases” enzyme, such as pyruvate carboxylase (pyruvate to OAA), acetyl coA carboxylase (acetyl COA-->malonyl coA in fatty acid synthesis), and propionyl co-A carboxylase (propionyl-coA to methylmalonyl coA in fatty acid synthesis)

Vit B6 or pyridoxine is involved with **transaminase**, **decarboxylation**, glycogen phosphorylase and GABA synthesis reactions as pyridoxal phosphate

loss sensation of the upper lip is due to loss of innervation from the infraorbital nerve

loss sensation of the LOWER lip is due to the loss of innervation from the mental nerve

UMN: contralateral and LMN: ipsilateral

- LMN found in ventral horn

UDP is involved with G1P not G6P

Alzheimer's - amyloid plaques

- Alzheimer is a type of dementia. Alzheimer shows increase in amyloid (T/T)

Negri bodies are found in the cytoplasm of nerve cells carrying rabies!

atrophy/aplasia/anaplasia/metaplasia

- anaplasia: lack of differentiation
- metaplasia: replacement of one tissue cell type with another
- Dysplasia: nonmalignant cell growth/development
 - most severe dysplasia: carcinoma in situ!
- neoplasia: abnormal growth
- aplasia: failure to develop
- atrophy: decrease in size of an organ

Mallory Weiss syndrome - alcoholics

- bleeding from tears at the esophagus/stomach junction; present with hematemesis

Mallory bodies are found in the cytoplasm of liver cells of ppl with liver related diseases (such as alcohol induced, Wilson's syndrome, hepatocellular carcinoma; NOTE: not responsible for hepatic failure)

southern blot- DNA; THINK OF “SNOW DROP”: Southern, Northern, o, Western-->DNA, RNA, o, and protein

which one has afferent and efferent lymphatic vessels? ans: lymph nodes; spleen and thymus have only **EFFERENT** vessels

features of Y shaped are found in 2nd mand premolars

Lingual gingival groove is found on MAX LATERAL INCISORS!!

- Max Lateral incisors have the DEEPEST LINGUAL FOSSA

Klinefelter - XXY

Turner: XO

what form of CO₂ is carried most in the blood? Ans: HCO₃-

motor innervation of thumb - median nerve

sensory innervation of the middle finger: C7

which muscle is **NOT** part of posterior axillary region? Ans: serratus anterior, which is innervated by the long thoracic nerve

ATP used most where in renal? proximal tubule

erector spinae is innerved by dorsal rami of spinal cord

stretch reflex is monosynaptic

- gamma motor neuron: innervate **intrafusal** fibers, which contract only slightly. The function of intrafusal fiber contraction is not to provide force to the muscle; rather, gamma activation of the intrafusal fiber is necessary to keep the muscle spindle taut, and therefore sensitive to stretch, over a wide range of muscle lengths
- alpha motor neuron: innervate **extrafusal** fibers, the highly contracting fibers that supply the muscle with its power.

cortisol made in? Ans: zona fasciculata

orthokeratinized in oral mucosa? Ans: doesn't have stratum lucidum

- Note: Stratum lucidum is ONLY FOUND IN THICK SKIN and is also not found in the oral mucosa

which one is sore while clenching? Ans: buccinator (if masseter not option)

temporalis is attached to coronoid process

- Ant part of the temporalis is involved with elevation; Post part of the temporalis is involved w/ retrusion

which one can you survive without? Ans: adrenal medulla (b/c they make Epi and NE which can be made elsewhere in the body)

structures closest to R and L kidneys (different on each side, look it up); Liver is on the right and Spleen is on the left

- colon is the organ closest to the right kidney

retrodisca tissue (aka bilaminar zone): loose CT and vascularized

nerve that travels with EJV? Ans: greater auricular

- Superficial cervical node runs w/ EJV
- Deep Cervical node runs w/ IJV

difference between a CYST and an ABSCESS - cyst is a sac with nonK ep

- Abscess: An infection-filled pocket anywhere in the body formed when foreign organisms destroy tissue
- Cyst: Any sac in the body filled with a liquid or semi-liquid substance. Not necessarily due to an infection; when it does becomes pus b/c of an infection, we now call this an abscess

arthritis of the big toe? Ans: gout

- Which enzyme does allopurinol block? Ans: xanthine oxidase

SUBSTANCE P is involved with tooth pain!

vertebral artery goes through foramen magnum

tip of tongue drains into submental nodes

which reflex is monosynaptic? - stretch reflex

insect vector - which one is NOT? Q fever ; caused by coxiella burnetti, which infects human or animals via spores NOT by ticks!!

- Arborviruses transmit via an insect vector
- Rocky Mountain fever: caused by Rickettsia Rickettsii

gallbladder is different than stomach, colon, and stomach b/c it has no submucosa

which is not broken down on its own or whatever? maltose

- **maybe referring to this repeat:** which one cannot get absorbed directly into the intestine? maltose, ribose, glucose or galactose? Ans: Maltose

distoincisal of mand central hits the lingual fossa of max central

if pressure on a mountain is 250 mmHg, what is Po₂? Ans: 50 mmHg (250 mmHg * 0.2)

filiform papillae: no taste bud and the most abundant

Von Ebner gland gives off serous secretion (same as Parotid gland)

glucose clearance - 0%

hering reflex - stretch reflex in lung; prevent over inflation of the lungs

HERS is derived from cervical loop (where IE and OEE meets)

heart in middle mediastinum

Dorsal of the tongue have a keratinized epithelium

- ventral of the tongue: non-keratinized epithelium

C7 provides sensory innervation to the middle finger and MEDIAN NERVE provides the motor innervation to the middle finger!

Rhomboid minor (muscle of the back) helps to adduct the scapula

G6Pase is ONLY found in liver and kidney but not brain or muscle

- Glucokinase is found only in the liver and brain but not muscles

Thymoma is tumor associated with what type of disease? Ans: Myasthenia gravis

Example of a Renal cell carcinoma is Bellini cell carcinoma

Example of an adrenal medulla cancer: PHEOCHROMOCYTOMA

First 4 intercostal veins on the right side of the body drains into the AZYGOUS VEIN; lower body drains into the HEMIZYGOUS VEIN which is on the Right side

Vasculitis including coronary arteries in children: Kawasaki disease

Blood disease in which arteries and veins of hands and feet are COMPLETELY BLOCKED: Buerger Disease

Lesser petrosal: from CN IX (parasymp); Deep Petrosal: from Carotid Plexus (SYMP); Greater Petrosal: from CN VII (parasymp)

deep petrosal+greater petrosal-->Vidian nerve (via the pterygoid canal)

Transverse sinus drains superior and inferior petrosal sinus

Internal jugular vein becomes sigmoid sinus at jugular foramen

- In reality: Inferior petrosal+sigmoid sinus-->IJV-->exits out of jugular foramen

Edema DOES NOT cause shock

Superficial Cervical Node runs with external jugular vein

Greater auricular nerve runs with EJV

Post auricular v+ Post branch of the retromandibular vein-->EJV

Deep Cervical Node runs with the internal jugular vein

Main sensory nuclei: Touch

Spinal: pain and Temp

Mesencephalon: proprioception

A beta: touch and pressure-->Dorsal Column-->1st order: trigeminal and 2nd order: Principal Sensory+ipsilateral VPM

A delta/C-fibers: pain and temp-->Spinothalamic-->1st order: trigeminal gang+Spinal trigeminal and 2nd order: Contralateral VPM

- C fiber: gives burning pain!!
- A-delta: gives sharp pain!!

A-alpha: proprioception-->Spinocerebellar-->1st order: thru trigeminal ganglia and 2nd order: Mesencephalic

Developmental groove make up the Y for mand 2nd PM? Ans: central and lingual groove

Absolute refractory period? Ans: inactivated Na+

- action potential: Na+/resting potential: K+

A patient comes in with chief complaint do shoulder pain, patient is obese what is causing the shoulder pain? **I DON'T FUCKING KNOW!!!!**

Autonomy (patient's wishes), Beneficence (do good), Nonmaleficence (do no harm), Justice (fairness),

Veracity (truthfulness)

- 1 CN 9 (glossopharyngeal) between **superior and middle constrictor**
- 2 Emphysema **won't puke blood-->AKA PINK BLOATERS**
 - Bronchitis: **BLUE BLOATERS!!!**
- 3 Chief cell releases **pepsinogen**
 - Parietal cells make HCl and Intrinsic factor
- 4 Increase vagal, **decrease hr**
- 5 Gamma efferent, **muscle spindle**
 - muscle spindle: detect muscle length and tension; involved w/ stretch reflex
 - golgi tendon organ: detect tension; involved w/ Tendon (or myotatic) reflex
- 6 Diphtheria, pertussis, tetanus **given to children**
 - toxoid: inactivated exotoxin and present in diphtheria and pertussis vaccine
- 7 Dorsal of tongue, **keratinized**
- 8 Rheumatic heart disease, **valvular insufficiency**
- 9 Bleeding esophageal varices, **cirrhosis**
- 10 Vagus innervates **ascending colon**
- 11 Tay Sachs, **ganglioside m2**: harmful quantities of cell membrane components known as gangliosides accumulate in the brain's nerve cells-->premature death of the cells

Folic acid (Vit B9) not required in collagen synthesis; Vit C is required for collagen synthesis

- alpha ketoglutarate is the requirement to go for the hydroxylation of proline to hydroxyproline
- Folate def and Vit B12 def-->Macrocytic
- Fe deficiency-->Microcytic

Haptens, **small molecule that can elicit immune response when attached to larger ones**

Fiber with fastest conduction velocity? I 1a, 1b, 3, 4, 5? Fastest = 1a

1 Phagocyte found in synovial membrane

6 weeks of pregnancy testlet

- Need good OH to prevent which pregnancy problem?
 - gingival bleeding
- Increase of hCG and decrease in FSH and LH

is meckels cartilage there; Meckel's cartilage give rise to the mandible!

- Meckel's cartilage came from the first branchial arch

does it form mandible by endochondral/intermembranous ossification? Ans: mandible is formed by intramembranous ossification.

- Condyle is formed via endochondrial ossification

know what else baby has at 6 weeks

tetracycline : if boy has anteriors and 2 molars (or somethig) stained, when did he take the tetracycline; Ans: Take during calcification, which is at birth for max molars!

- Tetracycline is used to treat malaria

question about fluorosis staining: brittle and mottled tooth with white brown spots

know when roots calcify - 2 questions on this

- Know primary teeth start calcifying 4-6 months in utero
- When does calcification of the primary roots take place? Completed by 3-4 years
- completion of root development for primary dentition: 1.5 years after eruption
- calcification complete for permanent teeth: $(\frac{1}{2} \text{ time of eruption}) + 1 \text{ year}$

mostly repeated micro questions: actinomyces, rickettsia

- purulent discharge after extraction is caused by actinomyces
- bacteria implicated in root caries: actinomyces
- actinomycosis (aka lumpy jaw): common bacterial infection (painful abscesses) of the face and neck caused by *Actinomyces Israelii*

vaccine for whooping cough: natural passive/artificial/active?

- Whooping cough (aka Pertussis) is caused by the bacteria *Bordetella Pertussis*; GIVE a killed active vaccine!!

which of these cells is not found at periosteum: osteoblasts, osteocyte, osteoclast, fibroblast, fibrocyte, chondroblast, chondrocyte; **I PICKED Chondrocyte! (I really have no clue!)**

which is most mitotically active during osteogenesis: osteoblast, osteoclast, osteogenitor cells, chondroblast? Ans: Chondrocyte

so much stuff on occlusion: know what words like laterotrusive and mediotrusive mean

- laterotrusive: working side
- Mediotrusive: non-working side

know where the tmj ligaments attach

- temporomandibular ligaments: articular eminence to condyle
- sphenomandibular ligaments: attach at the lingula
- stylomandibular ligaments: attach at the angle of the mandible and the styloid process

what surface of perm canine is convex from tip to apex

- Mand canine have a continuous convex facial surface from incisal to apical end, when viewed from the proximal aspect

know what angioma, angioedema, hematoma mean

- hematoma: A localized swelling that is filled with blood caused by a break in the wall of a blood vessel
- Angioma: benign growth that consists of small blood vessels
- angioedema: a swelling that is similar to hives, but the swelling is under the skin instead of on the surface

know diff between meissner and pacinian corpuscle

- Meissner Corpuscle: encapsulated; mechanoreceptor; allow 2 point discrimination (Fine Touch); Cannot find it in demis!!
- Pacinian corpuscle: encapsulated; vibration and pressure

where is crista terminalis is in heart ? Ans: Right Atrium

which enzyme of glycolysis sequesters glucose in the cell? Ans: hexokinase

- hexokinase have a lower km than glucokinase!
- Glucokinase is found ONLY in the liver and brain

what is the substrate of glucosyl transferase? Ans: Dextran (from combining two molecules of Glucose) and Levan (from combining two molecules of Fructose)

how iron is transferred in blood? Ans: via transferrin

where you do a spinal tap (I1-I2,I3-4,I5-s1) Ans: L3-L4

too much csf in brain causes: infarction, herniation, etc ? Ans: infarction

ant cerebral artery goes to frontal and parietal lobe

what nerve of brachial plexus innervates thumb? Ans: Median Nerve

- C7 provides the sensory innervation to the middle finger

what nerve of brachial plexus let's u do circumduction? Ans: Axillary nerve b/c of the deltoid muscle

When does heart muscle start to contract? Influx of extracellular calcium, release of calcium from sarcoplasma reticulum? Ans: release of calcium from sarcoplasma b/c the ca²⁺ induced Ca²⁺ release will be sufficient to initiate contraction. This is why so many drugs target this one!!

What do smooth, skeletal, and heart muscle have in common? Need high concentrations of oxygen, don't have a high regenerating capacity? (**I don't think both of them is one of the correct answer. But if I have to pick the BEST answer, it will be the "High concentration of O₂"**)

What is mesial to lingual ridge on Max canine? (**This question is remembered wrong?**)

- Based on released questions and remembered questions, these were the questions that they asked:
- On the lingual crown surface of max canines, which of the following structure located immediately mesial to the DL fossa?
 - cingulum
 - Lingual ridge (CORRECT ANSWER)**
 - ML fossa
 - mesial marginal ridge
 - distal marginal ridge
- What's distal to the lingual ridge? Ans: DL fossa

Testlet on Graves' disease my fave:

- Graves Disease has what features of TSH, T3 and T4? High T3 and T4 but low TSH

Shape of central incisor when you cut it at cej? Ans: Max Central: Triangular shape and for Mand Central: ribbon shape!

What is the contact area for mesial of mandibular canine? Ans: Junctional of the middle and incisal 1/3

Know diff bt max and man canine

- Mand Canine have the longest inciso-gingival crown than max canine
- Max canine is the longest overall tooth including the root!!

Know definition of dimorphism: simply speaking, there is an existence of two different forms

This guys primary 1st molar never fell out. Why? **Aplasia (CORRECT ANSWER)**, agenesis, ankylosis

- anaplasia: lack of differentiation
- agenesis: complete lack of organ whereas aplasia: absence of the organ with the rudiment present

He has a general loss of enamel but mostly on the linguas of the mandibular anteriors and molars. Why? Ans: **Erosion (CORRECT ANSWER)**, attrition, abfraction

somatotropin is growth factor

penicillin rxn urticaria = type 1 HS

bacillus anthrax exotoxin types

- 1 toxin in the toxin complex is edema factor, an adenylate cyclase and the other is a PA toxin

stop Parasympathetic to stomach = cut vagus

A delta = sharp pain

- A beta: touch and pressure-->Dorsal Column-->1st order: trigeminal and 2nd order: Principal Sensory+ipsilateral VPM
- A delta/C-fibers: pain and temp-->Spinothalamic-->1st order: trigeminal gang+Spinal trigeminal and 2nd order: Contralateral VPM

- C Fibers: burning pain
- A-alpha: proprioception-->Spinocerebellar-->1st order: thru trigeminal ganglia and 2nd order: Mesencephalic

mycoplasma leprae does NOT show up as PPD test

Wasserman test: test for syphilis

trachoma to eye = chlamidia infection

weil felix test: test for rickettsiae infection

ML cusp is tallest in primary lower 1st molar

articular surface of condyle = superior and anterior

know everything about lateral pterygoid

pure hinge on jaw = know length; Minimum opening: 30 mm for trismus

tooth pain sensation nucleus

- Facial pain nucleus: VPM
- Body pain nucleus: VPL

anterior tooth most likely bifurcation = mand canine

difference between metastatic and dystrophic

- metastatic calcification = hyper PTH
- dystrophic calcification = necrotic cells

sympathetic and PS general knowledge

lingual artery is medial to hyoglossus

- lingual nerve and hypoglossal nerve are lateral to hyoglossus
- Glossopharyngeal nerve is medial to hyoglossus

know what the lobes do generally in brain

- Frontal lobe: associated with reasoning, motor skills, higher level cognition, and expressive language
- Parietal lobe: associated with processing **tactile sensory** information such as pressure, touch, and pain
- temporal lobe: also the location of the primary auditory cortex, which is important for interpreting sounds and the language we hear
- occipital lobe: associated with interpreting visual stimuli and information

cross sections of teeth and canals

Know where infections go from sinuses and teeth

Muscle that loops around medial pterygoid hamulus: tensor veli palatine

Auriculotemporal nerve innervates TMJ

superior cervical ganglion get innervations from what spinal nerves? C1-4 (but answer on the exam is T1-T4)

- Middle cervical ganglion: C5-6 and Inferior cervical ganglion: C7-8

most common cancer of lungs = Squamous Cell Carcinoma

glutamate at pH=1 has +1 charge

acidophilic bacteria types (**MAYBE, H. Pylori or Lactobacillus**)

lining is fibrous CT, articular disc is fibrocartilage*****

- non-articular disk: synovial membrane

symptoms of cushings disease = increased ACTH

- Weight gain and HYPERGLYCEMIA

Sertoli cell (help with the development of sperms) cells similar to granulosa cells (help with the development of ovaries)

DEJ formed during bell stage

leukoplakia is a type of hyperplasia

know all about the arches pouches

- Inferior parathyroid and Thymus are from the third pharyngeal pouch
- External acoustic meatus come from the first pharyngeal pouch

HLA2 = T helper; HLA1 = CD8 cells

aflatoxins are produced by aspergillus

aplasia is NOT associated with metastatic cancer

enzymes for biochem cycles (obvious ones)

- hexokinase and glucokinase have DIFFERENT Km; hexokinase have a low Km
- glucokinase is only found in liver or brain

agar for fungi growth = Sabouraud medium

autoclave stuff:

- How do you sterilize something that is heat sensitive: ethylene oxide
 - The same can be said about Glutaraldehyde
- How do you sterilize something that is corrosion sensitive: **DRY** or AUTOCLAVE?
 - Silly rabbit, autoclave can corrode or dull carbon-steel instrument b/c it uses moisture heat to denature protein; Hence, we can use dry heat, chemical vapor, etc.

myosin heads have ATP activity

- binding to ATP to the myosin release it from the myosin binding site will allow it to be in the cocked cross bridge position to get ready to stroke!

3 questions on mediotrusive movements

Topics were pretty evenly distributed on my test. I did not have that many biochem questions or anatomy questions pertaining to below H&N such as axillary shit and abdominal structure shit. I did have a lot of microbio section about bacteria as well fungi. So review fungi! Anywhere here it is.

1. Know your basic parasympathetic stuff, muscles of mastication information
2. I had a lot of canine morphology questions, general height of contour questions, and a lot of stuff on anterior teeth morphology and contacts. I did not have that many root-related questions.
3. Longest cusp on primary 1st molar à MB according to deck, ML according to first aid, so FML...
 - **My take on this confusion: ML cusp is the largest, sharpest, and longest for BOTH primary MAX 1st Molar and Mand 1st Molar and MB cusp is the biggest for primary max 2nd molar; Source: my plastic dental anatomy teeth and Bucky's email LOL**
4. I had like 4 questions on the same exact answer saying that there are 3 roots in maxillary first molar and that it has 4 root canals and the 2 canal-containing root is MB
5. 5 questions on 1st vs. 2nd premolar morphology comparison questions for maxillary and mandibular – I had like 3 questions asking about maxillary premolar LINGUAL cup that it tilts mesially.
6. Y-shape groove of mandibular 2nd premolar made by union of facial, mesial, and distal grooves. I'm not quite sure how facial groove will be involved, but rest of the choice contained CENTRAL groove, so it couldn't be the answer
 - **It's really Mesial, Distal, Lingual developmental grooves that form the Y shape groove!**
7. 5-7 easy primary teeth questions such as primary central having MD longer than IC length. What succedaneous teeth will replace what primary teeth type of stuff.
8. I had about 4-5 ethic questions. UGHHHH
 - Ethics: Autonomy (patient's wishes), Beneficence (do good), Nonmaleficence (do no harm), Justice (fairness), Veracity (truthfulness)
9. What does not cause PPD? Ans: M. leprae
10. Connects IV septum from Right ventricle and help conduction or some shit--> Moderator band
 - Moderator band: act as a primary conduction path in to the free wall originating from the right bundle branch
11. Weil Felix: diagnostic test for Rickettsia (Rocky Mountain Fever)
 - Wassermann test: test for syphilis
 - Q fever: coxiella
12. Dental pain: subnucleus INTERPOLARIS of trigeminal spinal nucleus
 - The spinal nucleus is composed of three subnuclei: subnucleus oralis (pars oralis), subnucleus caudalis (pars caudalis), and subnucleus interpolaris (pars interpolaris). The **subnucleus oralis** is associated with the transmission of **discriminative** (fine) tactile sense from the orofacial region. The **subnucleus interpolaris** is also associated with the transmission of tactile sense, as well as dental pain, whereas the **subnucleus caudalis** is associated with the transmission of nociception and thermal sensations from the head.
13. Chickenpox related – Herpes Zoster
14. Hard palate has mucous glands
 - Parotid gland: serous; von ebner gland: serous; submandibular: serous and mucous; sublingual: mucous

- Hard Palate is part of the masticatory mucosa that is KERATINIZED!!!
15. IgG associated with periodontal disease
 - most common bacteria in periodontitis is *Prevotella intermedia*
16. sIgA is answer for one of them about saliva (NOT MONOMERIC IgA)
17. Which hepatitis is most likely to become chronic (choices: A, B, C, D, E) (ans: C) yes c for chronic
18. Dry heat used for materials that are not heat-sensitive and won't corrode
 - Autoclave can corrode the metal
19. Ethylene oxide for heat-sensitive materials (or it can be glutaraldehyde)
20. Bacteria causing dysentery? *Shigella*
21. Most common cause of eye infection: chlamydia trachomatis
22. What is NOT superficial to hyoglossus? Ans: lingual artery
 - Medial to Hyoglossus: glossopharyngeal nerve and lingual artery
 - Lateral to hyoglossus: lingual nerve and hypoglossal nerve
23. What is a delayed type hypersensitivity? contact dermatitis
24. What is unique to gram negative bacteria? endotoxin (aka LPS)
25. What is the pathophysiology of Myasthenia Gravis? Ans: destruction of the acetylcholine receptors at the NMJ via circulating antibodies that block them!
26. Which of the following has the longest incubation period? I was between Mumps and Hep B, so look this up; ANS: Hep B
 - Mumps' incubation period: 12-25 days; Hep B incubation: 90 days
27. Virus in association with salivary glands? Mumps (**I AGREE; coxsackie, and herpes can be true too**)
 - Mumps and Measles are examples of paramyxovirus
28. Where does Sjogren syndrome affect? salivary glands
29. Sharp shooting pain? A delta fibers
 - Burning pain: C-fibers
30. Limiting step of glycolysis? PFK-1
31. Aflatoxin is produced by Aspergillus
32. Fungi causing systemic infection? Ans: Coccidioidomycosis (rest were superficial fungi)
33. How does cAMP work? activate Protein Kinase A (PKA)
34. What enzyme catalyzes glycogen to glucose? glycogen phosphorylase
35. What is not in dental plaque? *S. pyogene*
36. What is commonly found in pancreas and parotid glands? I read somewhere pancreas does NOT have striated duct. I wanted to pick that one, but remember reading that somewhere I just went with MIXED (MUCUS and SEROUS) instead. **I AGREE that pancreas does not have striated ducts**
37. Fumarate links urea cycle to what? Ans: TCA cycle
38. Something about capillaries and its flow is the slowest there because of the largest cross sectional area
39. Respiratory acidosis is caused by morphine or **HypoVENTILATION?** Ans: HYPOVENTILATION
40. Respiratory alkalosis is caused by? **Hyper**ventilation
41. Diarrhea will be initially caused by: hyperkalemia
42. Which of the following does NOT use NADPH? Ans: making glucose from pyruvate
 - NADPH made by pentose pathway and utilized in the Calvin cycle (in plants) to make glucose
43. Skin area in the angle of the mouth will drain to: Ans: submandibular nodes
44. DNA replication is committed by what phase? Ans: S
 - Most variable cell phase: G1
45. DEJ shape determined at BELL stage

- Remember that it goes from Bud, Cap, Bell, Apposition, then Eruption
46. Some shit about mesial cervical line of #28 similar to? I looked at an old rmb'ed and it had #21 MESIAL (OBVIOUSLY DUHHHHHHHH) but #21 mesial wasn't a choice. Instead distal #21 was one of the choices. So it couldn't be that. So I went with distal of #27 – I figure they'd have to be on the same level to form the contact area.--**No clue what this person is asking about!**
47. FETUS right atrium to left atrium shunt--> FORAMEN OVALE (Fossa ovalis is one of the options, so don't fall for it)
48. What is made by superior belly of omohyoid, posterior belly of digastrics, and anterior SCM?
Ans: Carotid triangle
49. Where are Macrophage in TMJ? Located in synovial membrane
50. which bacteria have Polypeptide capsule with PA and EF toxins? Ans: bacillus anthax
51. Nystatin inhibits HMG-CoA reductase; **Silly rabbit, Nystatin is an antifungal medication!!**
Maybe, we need to find another drug that has the word -statin in it, just not this statin LOL!!
52. First location to calcify in enamel--> incisal edge
53. All of the following contribute to edema EXCEPT? Shock (it's in the old questions file)
54. Demilunes is what cells? serous and mucus cells (mixed cells)
55. What lines the visceral side of kidney? I had no fucking idea it's either podocytes or fenestrated capillaries-**I LIKE FENESTRATED CAPILLARIES b/c it's the one that is closest to the inside of the kidney**
56. There was this testlet question about what is true about this patient's allergy with medication (Penicillin)
. OKAY. WTF. Type 1 hypersensitivity – IgE was NOT there. And the only choice that even made sense was type 4 hypersensitivity – T cell, so I just picked that. What a dumb question
57. 4-5 questions just knowing that increasing vertical overlap can/may have taller posterior cusp
58. Odonblasts formation before any event in tooth formation/differentiation (**Read below for the correct explanation**)
 - differentiation of ameloblast occurs before differentiation of odontoblast!
 - Deposition of odontoblast occurs before deposition of ameloblast!
59. What is not true PMN? something about antibody elaboration
60. 3-4 questions on what structure lines what epithelium. What I remember was doing simple (low) columnar for salivary ducts (not large ducts), and it asked what lines trachea – I put stratified squamous, but it might be pseudostratified columnar, so check on this
 - Epithelium of respiratory tract and pharyngeal tonsils - pseudostratified ciliated columnar Ep with goblet cells
 - Sweat glands are stratified cuboidal
 - Urinary bladder: transitional epithelium with dome shaped cells
61. Sertoli cells are equivalent of granulosa
62. Portal vein contains drainage into the liver, pancreas, SI, and large intestine
63. A few questions requiring you to know what happens during sympathetic vs. parasympathetic. Only one I specifically remember was you can cut vagus nerve to stop digesting, and it asked what's false about sympathetic and the answer was constricts pupil
64. What is not necessary for living? Adrenal medulla
65. Calcitonin function? choices looked retarded, but I picked decreases serum phosphate
 - PTH: increase in calcium and decrease in phosphate
 - Vit D: increase in calcium and increase in phosphate
66. Secretin is made by? Ans: duodenum
67. SomatoMEDIN directly" affect GH for chondrocytes and bone or someshit like that. This is correct
68. 3-4 questions simply asking if you knew about GTFase of S. mutans and that it uses sucrose as substrate.

- One of the questions asked was what linkage dextran was Alpha 1-6 and alpha 1,3
- dextran: two glucose and Levan: two fructose

69. Most common cancer in the lung? squamous cell carcinoma (DO NOT PICK SMALL CELL CARCINOMA!!!!)

70. Question gave you scenario about acid phosphatase is not elevated and prostate hormone level like rising up and shit. What is this indicate of? Answer is benign tumor of prostate, do not pick cancer. BPH is not malignant

71. 4-5 question requiring you to know definition of anaplasia, metaplasia, and dysplasia (I picked each of them for an answer choice)

- dysplasia: non-malignant cell growth; most severe is Carcinoma in situ

72. Dilaceration definition

- dilaceration: developmental disturbance in shape of teeth. It refers to an angulation, or a sharp bend or curve, in the root or crown of a formed tooth. due to trauma or possibly a delay in tooth eruption relative to bone remodeling gradients during the period in which tooth is forming.

73. PKU results "in"? No clue. This question was unbelievable. The CAUSE of it lack of phenylalanine hydroxylase, but question was asking what it results in, so lack of phenylalanine hydroxylase made no sense to me. I went with the choice "inability to oxidize phenyl-pyruvate acid." **PKU results in the lack of functional PAH; can't answer it with 100% b/c he didn't write down all the choices**

74. Definition of xenograft: some shit about pig to human transplant choice

- xenograft: transplant btn two different species
- allograft: transplant btn two genetically different individuals in the same species
- isograft: transplant btn two genetically identical individuals in the same species (Eg. twin brother)
- autograft: transplant from one site to another within the same individual

75. The molecule responsible for reacting upon transplantation: HLA

76. Stylopharyngeus and greater hyoid derived from 3rd pharyngeal arch

- lesser hyoid is derived from the second branchial arch

77. External acoustic meatus is derived from "1st Pharyngeal POUCH." It had both 1st cleft and 1st arch as choices, so watch out

- Inferior thyroid and thymus from 3rd pharyngeal pouch

78. Sensation to upper lips is innervated by the infraorbital nerve

79. Pain on upper right (#3): this is from left parietal lobe

- Frontal lobe: associated with reasoning, motor skills, higher level cognition, and expressive language
- Parietal lobe: associated with processing tactile sensory information such as pressure, touch, and pain
- temporal lobe: also the location of the primary auditory cortex, which is important for interpreting sounds and the language we hear
- occipital lobe: associated with interpreting visual stimuli and information

80. TMJ ligament inserts to zygomatic arch (and the articular eminence)

81. One of the case question was that a patient had PUD (peptic ulcer) and dentist gave the patient antibiotics and you had to pick a choice why --> answer choice is something along the line where antibiotics killed the stomach bacteria and patient feels better now

82. Most anterior and superior position of condyle: centric relation

83. Rest position (aka postural position) is muscle guided

- tooth guided: centric occlusion
- ligament guided: centric relation

84. Colon cancer risk factors-->Villous adenoma (DO NOT PICK PEUTZ JEGHER); I

DISAGREE; Peutz Jehger increases colon cancer 15x!

85. Patient has trismus, how much can this person open? I put 30 mm (this was the smallest #)
86. Inferior border of inferior joint space-->condyle
87. Know that ADH acts on the distal tubule and collecting duct
88. Infection in the maxillary sinus will spread to which of the paranasal sinuses? Ans: ethmoid; next best two options: sphenoid and last is frontal sinus (Best-->ok)
89. Wrist innervations--> median nerve
- innervation of the thumb: median nerve
 - sensory innervation of the middle finger: C7
90. Structure around parotid glands? I put like ECA branches, retromandibular vein, and facial nerve-**TRUE**
91. I had to pick MSA for one of the questions on a teslet because PSA was not there
92. Position relationship where lingual nerve is compared to inferior alveolar nerve in the infratemporal fossa à no fucking idea, I put anteriorly and medially-**I AGREE!!!**
93. Lateral pterygoid and suprahyoids work together to cause OPENING of the JAW
94. Ansa cervicalis innervations to infrahyoids
95. Structure between superior and middle constrictor: stylopharyngeus
- nerve that runs btn stylopharyngeus and palatopharyngeus: CN IX
96. Not innervated by CN 12: Palatoglossus
97. What transports triglycerides? chylomicron
- VLDLs pick up endogenous triglycerides and cholesterol from the liver, and send the triglycerides to fat and muscles
98. Which taste with least something? The way I read it was that what has the lowest threshold; I put bitter **I AGREE**
99. Some simple shit about what is NOT true about PCR (very easy)
100. What is not related to alveolar bone resorption? Answer choices are the same was the old question set... I went with lymphokines, but I am not sure about the answer
101. Not a cause of atrophy? overstimulation of hormones
102. Mineral required during coagulation? calcium (and you need Vit K and alpha-ketoglutarate)
103. Crepitus lady. Cause is? à I put osteoarthritis
- crepitus: a medical term to describe the grating, crackling or popping sounds and sensations experienced under the skin and joints or a crackling sensation due to the presence of air in the subcutaneous tissue; common cause: arthritis or osteoarthritis
104. Extracellular event of collagen formation: cross-linking
105. Which of the following is true regarding PCT? Up to 95% of the filtrate can be reabsorbed in the PCT
106. Where does it require the most ATP in glomerulus? Proximal convoluted tubule
107. True statement about apoptosis: hormone-dependent involution (yeah I know it sounds retarded, but none of the other choices made any sense)
108. IL-1 and TNF-a made by activated macrophages
109. Something about posterior border of pharynx – I was between prevertebral fascia and retropharyngeal space. I picked prevertebral fascia-**I AGREE**
110. K for resting potential regulation and Na for action potential
111. Review the anatomy of larynx area. It asked me what was the most superior structure among the listed choices and I had no fucking idea.
- All of the following elevate the larynx except the the Sternothyroid
 - Larynx starts after C6 (past pharynx)
112. What is not in piriform recess? external laryngeal nerve
113. Buccinator is penetrated during inferior alveolar block
114. What muscle hooks around hamulus? tensor veli palatine
115. What is not true about asthma? something about airway enlargement (it is in old questions)
- goblet cells are responsible for too much mucus in asthma

- asthma medication works on beta receptors
116. What amino acid can form a covalent bond to stabilize the tertiary structure? Cysteine
117. Charge of glutamic acid at pH of 1--> +1 (don't go with 0 like old file, 0 is wrong)
118. Something about 50% penetrance, what is the chance of offspring being affected? 25%
119. Something about 250 mmHg oxygen, and what is the concentration or someshit. Answer is 50 mmHg ($250 \text{ mmHg} * 0.2$)
120. What is not innervated by facial nerve? masseter (which is innervated by V3)
121. Superior cervical ganglion location is T1 – T4
122. If there is a substrate binding and it knocks off the enzyme COMPLETELY, what is it called? Non-competitive was one of the choices, but I couldn't pick that because it said the function gets irreversibly knocked out completely. I picked End-Point, but I don't even know what that means-**NO FUCKING CLUE!!**
123. Middle cerebral artery mostly likely the site for stroke
124. Portal vein contains the blood from: Ans: liver, pancreas, small and large intestine
125. Not a risk factor for breast cancer? I put late menarche I think-**I agree!!!**
126. Least likely to be present in the **exudate**? I put eosinophil--**Agree**
127. Histamine release requires Mast cell binding: IgE
128. Maxillary sinus drain to middle meatus
129. Alzheimer is the leading form of dementia in the U.S. It is mainly seen in the people <50 of age: this was T/F type question. Answer is T-F
130. Common in Alzheimer, cerebrovascular disease, and Parkinson--> dementia
131. Some false statement about osteoporosis: Osteoclastic inactivity (rest 4 choices were true)
132. PT affected upon using warfarin
133. Difference between cartilage and bone: cartilage is avascular
 - NOTE: appositional growth occurs in both cartilage and compact bone, but interstitial growth also occurs in cartilage too
134. H2 receptor in stomach activates which cell? Parietal cells (which make HCl and also intrinsic factor)
 - Chief cells make pepsinogen!
135. Colloid cells are in thyroid
136. A few questions requiring you to know that steroid hormone has a nuclear receptor and it acts slowly. One of the answer was estrogen
137. What causes a slow response? Epinephrine or thyroxine; Ans: Thyroxine!
138. Which bacteria is Aciduric bacteria? lactobacillus
 - The other one is Strept Mutan and H. Pylori
139. Arachnoid villi drain to where? Ans: venous system....
140. Enlarged lymph nodes are due to? Ans: hyperplasia (I put hyperplasia twice for different questions)
141. Most abundant enamel protein? Ans: amelogenin
142. Every proton pumped during respiration is coupled with what or some shit like that à I put electron
143. Source of nitrogen for urea cycle: carbamoyl phosphate and asparate
144. Vitamin K help produce prothrombin
145. Inactivated virus: Salk
 - toxoid: inactivated exotoxin; found in vaccines for tetanus and diphtheria
146. Achalasia is associated with esophagus
147. Test for peptic ulcer? Ans: I put (+) occult for bleeding in the stool or someshit
148. Clindamycin inhibits production of 50s ribosome
149. Aminoglycosides work via inhibiting protein synthesis (30s) (HINT TO MEMORIZE: Rotate the m 90 degrees)
150. Nissl body are rER in the nerve cells

151. Howship's lacuna: osteoclast

152. Oxidative decarboxylation? I put pyruvate dehydrogenase because rest of the choice seemed retarded--I AGREE!!!!

- Note: Vit B6 is involved w/ transamination and decarboxylation whereas Biotin is involved with carboxylation

1. somatomedin (same as the insulin growth factor) – stimulate growth
2. penicillin: Type 2 hypersensitivity IgG and IgM (Type 1 hypersensitivity if allergic reaction to penicillin (IgE mediated))
3. Complex exotoxin- listed the three ones EGF/LM/something else: Bacillus Anthracin
4. Minor salivary gland of palate: mostly Mucous
5. If wanted to stop parasympathetic to stomach: CUT VAGUS
6. Omeprazole: affects parietal cell (irreversible proton pump inhibitor; suppresses stomach acid secretion by specific inhibition of the H +/K + ATPase system found at the secretory surface of gastric parietal cells)
7. Clinical scenarios where person has 5 sec pain that comes on sharply and stops right away (nonlingering): A-delta fibers responsible (A delta - myelinated pain, C fibers - unmyelinated pain)
8. Which of the following would not show up PPD+: M bovis (TB in cattle), M. tuberculosis BCG vaccination (prepared from a strain of the attenuated live bovine tuberculosis bacillus) M leprosae
*What can you absolutely say about someone you gets a positive PPD or type IV test? that person had exposure to TB but cant tell the diff if the pt had a vaccine or naturally immune
*What cells responsible for type IV? macrophage and helper T cells
*Osteoclast → macrophage lineage
9. Describe infected eyes associated with Chlamydia: TRACHOMA
10. Weil felix reaction: C. rickettsia
 - wassermann test: test for syphilis
11. Myoneuronal: btwn muscle and graded action potential
12. Resting potential determined by mainly by: potassium (not sodium)
 - Na+ for action potential
 - inactivation of Na+ is for refractory period
13. Biggest tallest cusp of primary mandibular first molar: ML (opposite of permanent mandibular first molar which has MB as biggest cusp) (ML is highest & sharpest; MB is overall biggest in primary mandibular 1st molar)
14. Cusp that is involved with transverse ridge and oblique ridge: ML
15. Immediately distal to mesial marginal ridge of tooth #6: ML fossa (I think i had this)-YEP YOU ARE CORRECT!!!!
16. Primary teeth vs permanent teeth: primary teeth are whiter and more cervical constriction

17. First event to take place: initiation of inner epithelium, **formation of odontoblast**, deposition of dentin
18. Articulating surface of condyle: superior and anterior
19. **Anterior and superior position of condyle: Centric Relation**
20. Pure hinge/rotation of mandible: patient would only be able to open about **30 mm**
21. **Lateral pterygoid** inserts onto **articular disc (superior head)** and **mandible condyle (inferior head)**
22. Inferior border of inferior compartment: **CONDYLE**
23. Clinical situation: patient has stomach pain that relieved by drinking milk and doctor prescribes amoxicillin for dental infection (describing H. pylori infection in stomach) why did the pain get better?

THE AMOXICILLIN TREATED THE BACTERIAL INFECTION OF THE STOMACH

24. Tooth pain: sensed by **Subnucleus Interpolaris (aka Pars Caudalis)** of trigeminal
 - The spinal nucleus is composed of three subnuclei: subnucleus oralis (pars oralis), subnucleus caudalis (pars caudalis), and subnucleus interpolaris (pars interpolaris). The subnucleus oralis is associated with the transmission of discriminative (fine) tactile sense from the orofacial region. The subnucleus interpolaris is also associated with the transmission of tactile sense, as well as dental pain, whereas the subnucleus caudalis is associated with the transmission of nociception and thermal sensations from the head.
25. In pterygopalatine fossa, relationship of lingual nerve to the inferior alveolar: Anterior and Medial
26. Size of cusps in Mx first PM: **Buccal is bigger than lingual** (Mx 2PM they are equal sized cusps)
27. Anterior tooth more likely to have bifurcated root: **MANDIBULAR CANINE**
28. Cingulum of max central is toward the **distal**
29. Know contacts of anterior teeth and posterior teeth and height of contour
 - Contacts:
 - Max: IJ, JM, JM, MM, MM, MM
 - Mand: II, II, IM, MM, MM, MM
 - HOC:
 - Max: JC, CC, CC, CM, CM, CM
 - Mand: CC, CC, CC, (J)M, JM, CM, CM; (J): cervical and middle 1/3
30. Lingual height of contour of canine is the **cingulum area**
31. Class 3 patient, in retrusion, which teeth does max lateral hit? Ans: mandibular lateral and canine
32. Determined by marginal ridges and cusp ridges: occlusal table
33. **Dystrophic calcification occurs in necrotic tissues (in damaged tissues)**
34. **Metastatic calcification: occurs in normal tissue can be due to HYPERPARATHYROIDISM**
35. Calcitonin inhibits bone resorption (**Calcitonin tones down serum Ca; stimulates osteoblast activity**
→ **bone deposition & inhibits osteoclast activity**)

- calcitonin: decrease Ca²⁺/PO₄³⁻
- PTH: increase Ca²⁺ and decrease in PO₄³⁻
- Vit D: increase PO₄³⁻ and increase in Ca²⁺

36. Which is not needed for alveolar bone resorption; **lymphatic cytokine (or lymphokine)**, LPS, osteoclast, interleukin

37. Cell greatest in number in inflammation/periodontal dz: neutrophil

38. Which of the following is NOT characteristic of asthma: thickened bronchiolar smooth muscle, increased mucous secretion, histamine, **increased size of alveolar sac**

- **bronchiolar epithelium is the most common place to find lung cancer**
- **most common lung cancer:** SCC

39. Not necessary for survival : **Adrenal Medulla** (pancreas and the rest are necessary)

40. Which of the following structures is not between the mylohyoid and hypoglossus: **lingual artery!!**
(lingual nerve, inferior alveolar, submandibular ducts are)

41. Left side of face below zygomatic bone paralyzed caused by: lesion of corticobulbar tract on contralateral side

42. Tooth pain on left side perceived by **right parietal lobe** (contralateral somatosensory cortex)

43. Longest tooth including root in mouth: **Mx Canine (6 or 11)**

44. Cross section of Mx CI in cervical 3rd: Triangular

- cross section of Mand canine: ribbon shaped
- cross section of max 1st PM: kidney bean shaped

45. Asked a few questions with answers being Mx 1st permanent molar: 4 root canals: 2 MB, 1 Palatal, 1 Distal

46. Infection of the sinus mostly likely to spread so which of the paranasal sinuses: **Ethmoid**

47. Mx sinus drains into middle meatus by meatus of semilunar hiatus

48. Sphenoid bone contains: **hypophyseal fossa and optic canal**

- In another version, you can also find ovale and rotundum
- In another version, you cannot find carotid canal (which is part of the temporal bone) in the sphenoid bone

49. Muscle that loops around medial pterygoid hamulus: **tensor veli palatine**

50. Muscle in between middle and superior constrictor muscles: **Stylopharyngeus**

- nerve that runs in between middle and superior constrictor muscles: CN IX

51. **Which muscle is not affected by CN VII paralysis.** Masseter (risorius, orbicularis oris and some other muscle of facial expression is)

52. Infection of Mx tooth drains into which lymph node: **submandibular lymph node**

53. Submandibular and sublingual salivary glands are along lingual nerve. Or might have been that sublingual salivary gland have their postG PS cell bodies in submandibular ganglion
- submandibular gland empties into the sublingle caruncle (or papilla) aka Wharton's duct!
54. Refractory period determined by: **inactivation of sodium channel**
- Na^+ for action potential and K^+ for resting potential
55. Which of the following processes of collagen synthesis takes place outside the cell: intermolecular linkages
56. Superior cervical ganglion: from **T1-T3** (pregang), **lies on C1-C4**, postG Symp of head and neck have their cell bodies in the superior cervical ganglion
57. Innervation of TMJ: **mandibular V3 (via auriculotemporal nerve)**
58. Which of the following does not transverse the jugular foramen: internal jugular, **hypoglossal**, vagus, glossopharyngeal, accessory nerve
59. Lateral pterygoid and **infrahyoid muscles** open jaw/ depresses mandible-**FALSE STATEMENT**
- Lateral pterygoid & suprathyroid muscles (aka accessory muscles of mastication) help open (or depress) jaw!
60. What structures run through the parotid gland: retromandibular vein, external carotid artery, facial nerve. (**Superficial temporal artery & branches of great auricular nerve also pass through**)
61. **Sensory innervation of LOWER lip and chin: mental nerve (branch of IAN)**
- Sensory innervation of the Upper lip: infraorbital nerve
62. for ethics questions, gives you a sentence and asks which principle that is describing (autonomy (whatever the patient wants), justice (fair), beneficence (do good), non-maleficence (do no harm))
63. most common cancer of lung: squamous cell carcinoma.
64. Smoker for 20yrs weight loss over the past few months, mostly likely cause is: bronchogenic carcinoma (weight loss is the big cue)
65. Breast cancer risk increased by all of the following **except** what? Nulliparity, early menstruation, **late menarche**, something else
66. Net charge of glutamate at pH 1 = **+1**
67. Rate limiting step of glycolysis catalyzed by phosphofructokinase (PFK)
68. Fumarate links urea cycle to: **citric acid cycle**
69. Oxidative phosphorylation: for every H^+ donated there is also an electron given off
70. Cofactor of hydroxylation of collagen proline: vitamin C (absorbic acid) glutamate, not **VITAMIN K**
71. Ion involved in coagulation: Ca^{2+}
72. Patient on Coumadin: **determine PT (extrinsic)**
73. Incisal edge: earliest to develop
74. Tetracycline affects: **protein synthesis (inhibits protein synthesis)**

- Never give tetracycline around the time of calcification
75. PCR amplification, all of following except: heat, anneal, DNA primer!...requires a plasmid (false:
DOES NOT REQUIRE A PLASMID)
76. Which of the following is aciduric: ***lactobacillus*** casie (no s. salivarius etc)
77. Part of cell cycle that is committed to DNA replication: **S phase**
- most variable cell phase: G1
78. Articulating surface of TMJ of 3 yr old composed of fibrocartilage
- non-articulating surface is composed of the synovial membrane
79. All of the following are common between cartilage and bone have except: appositional growth,**large blood supply** (false since cartilage does not have a blood supply)
- Note: cartilage have both appositional and interstitial growth whereas bone only have appositional growth ONLY!
80. Which of the following is due to aging: osteoarthritis
81. Major matrix component in enamel: amelogenin(this is organic component?) (not hydroxyapatite and this is inorganic component)????
82. Tooth where mesial cusp ridge longer than distal cusp ridge = **Mx 1PM** (facial cusp offset to distal → MB ridge longer than DB)
83. In Mx 1PM and 2PM: **cusps are offset to lingual**
84. Turner syndrome: 45XO
85. Increased ACTH is Cushings: **weight gain, hypERglycemia**
86. Why does strep pharyngitis infection need to be treated right away? Prevent acute rheumatic fever
87. Virus which has carrier state: Hep B and C
- Hep A and E have no carrier state
88. Organ involved in portal circulation: spleen, small intestine, stomach etc
89. Achalasia: associated with ESOPHAGUS. (**Achalasia** →esophageal disorder where muscle doesn't relax, reduced peristalsis, damage to nerve fibers) (Atelectasis → collapse of lung)
90. **Sign of peptic ulcer:** hypovolemic shock and bleeding in stool in believe (aka occult bleeding)
91. Sign of dehydration: hypokalemia
- diarrhea is caused by hyperkalemia!
92. ACE inhibitor: to reduce blood pressure, inhibit angiotensin I -->angiotensin II
93. Which of the following causes increased risk of colon cancer: **Peutz Jehger** (don't think the answer was villous adenoma)--**I AGREE!!**
94. Clinical: patient has extraction of 17... pain one week later... diagnosis is Osteomyelitis
- most common bacteria in osteomyelitis: staph aureus
95. What nerve innervates or transmits the pain is coming from the extract tooth 17: Inferior alveolar

96. Which does not go through cavernous sinus: oculomotor, abducent, ophthalmic division of trigeminal, **Optic nerve**

- Think of “OTOMCAT”: ophthalmic, Trochlear, Oculomotor, maxillary nerve, internal carotid, abducens

97. Arachnoid granulation/projection: **drains from CSF into Ventricles**

98. Which supinates radioulnar joint: **Biceps Brachii (innervated by musculocutaneous n)**

- Tricep: innervated by radial nerve

99. Which nerve is in the middle of the wrist: Median nerve

100. **Sternothyroid and sternohyoid muscles innervated by ansa cervicalis**

- Geniohyoid NOT INNERVATED by Ansa cervicalis

101. Carotid triangle: **Posterior belly of Digastric, Anterior border of sternocleidomastoid, Superior belly of omohyoid.**

102. All of following innervated by hypoglossal except: **palatoglossus (vagus)**, intrisinc hyoglossus, styloglossus

103. Vertebral artery go through **foramen magnum**

104. Connects from IV septum, in right ventricle, involved in conduction: **moderator band**

105. NO causes in all of the following except: **HTN**, vasodilator, smooth muscle relaxation

106. **Foramen Ovale**: in fetus, hole btwn right and left atrium

107. Which of the following is not derived from ectoderm: sweat gland, epithelium, keratin, nails, **Dermis** (mesoderm)

108. **Granulosa** cells of ovary =**Sertoli** cells of testes

- Sertolic cells are involved with the development of sperm and granulosa cells are involved with the development of ovaries

Which of the following are not found in seminiferous tubules? **sertoli, leydig, spermatocyte, spermatagonia, etc.** Ans: mature sperm!

- Sperm is stored in the Epididymis

109. Pseudociliated transitional epithelium to squamous epithelium describes: **Metaplasia**

110. DEJ (**basal lamina btwn IEE and dental papilla**) formed during **BELL STAGE**

111. **Rests of Malassez**: from breaks in Hertwigs epithelium root sheath/the remnant of HERS

112. Greater vertical overlap : **greater the height of posterior cusps/steeplers they can be**

113. Distal contact of max lateral: **middle third**

mesial contact of mand canine (Ans: incisal 1/3)? distal contact of max canine (Ans: Middle 1/3)?

114. Leukoplakia caused by: **Hyperplasia** (NOT hypertrophy)

115. First branchial POUCH: **external auditory meatus**

- third pharyngeal pouch: Inferior thyroid and Thymus

116. Stage of implantation : **TROPHOBLAST** ; DON'T THINK THIS IS RIGHT! The embryoblast is the one that gets implanted into the uterine endometrium!!!
117. What kind of cells in DEMILUNES: **SEROUS** and **MUCUS (OR MIXED)**
118. Striated ducts: **Simple Low Columnar cells**
119. **PAH** (paraaminohippuric acid is completely secreted into proximal tubule and excreted into urine) used to measure **RENAL PLASMA FLOW**
120. Sjogren's Affects: **Salivary glands**
121. Athletes foot: **TRICHOPHYTAN**
122. Common to all systemic fungi: not positive but I think its that they are in **yeast form** in the body
123. Clinical case: describes **dermatomal lesions** on only one side.. virus is **herpes zoster**
124. **Aflatoxin is produced by aspergillus**
125. Trichophyton, Microsporum, one other are fungi associated with something (not **histoplasmosis** (**yeast cell located within host macrophage**).... It was an all of the following except type of questions)
126. Where is cervical bulge on mandibular first primary tooth: **MB**
127. Transverse ridge: **MB to ML cusps**
- **ML and DB-->Obtuse angle; MB and DL-->Acute angle**
128. **Polymeric IgA** in saliva secretion (not monomeric IgA, which was another choice)
(IgA and IgM can only exist in dimer/polymeric form)-->I LIKE sIgA (if you don't see this option, then go with polymeric IgA)
129. **Antigen processed MHC2** (from antigen presenting cells) combines with **CD4 helper T cells**
130. all of the following associated with metastasis except: **APLASIA** (failure to develop) (anaplasia, lymph node invasion etc are associated)
131. Molar most likely to have 3 canals: **mandibular first molar**
132. Which process transfer most genetic material: **CONJUGATION** (not transduction etc)
133. Gives you a codon and need to determine the anticodon (**AUG = Methionine/Start; UGA/UAA/UAG=Stop; third degenerative codon place**)
134. Respiratory acidosis can be caused by **HYPOVENTILATION**
135. Respiratory alkalosis can be caused by **HYPERVENTILATION**
136. Liver malfunction: result would be **Hypoalbuminemia**
137. **Sources of nitrogen is Urea Cycle:** Carbamoyl phosphate and aspartate
138. Myoglobin: which of the following is true: **HYPERBOLIC CURVE!!** (not sigmoidal like hemoglobin) quaternary structure (does not have quaternary structure) does not have allosteric activation/inhibition etc
139. More occlusion/cusp in fossa relationship

140. Gives description of REST POSITION (aka postural position)
- Rest position: muscle guided!
 - Centric relation: ligament guided
 - Centric Occlusion: tooth guided
141. Not ideal in mutually protected occlusion: **MESIOTRUSION**
142. Lesions/defective lateral pterygoid on left...mandible will shift to the left
143. Greater splanchnic carries: **PREGANGLIONIC SYMPATHETIC → Enteric gut & Adrenal Medulla**
144. How does parotid get parasympathetic innervation from **Otic Ganglion** to **Parotid gland**: by way of **AURICULOTEMPORAL NERVE**
145. **What nerve innervates over upper lip:** Intraorbital of V2
146. **Mandible** rotates around **vertical axis** mostly in **laterotrusive (working side) movement**
147. going to extract upper right third molar and lower left 3rd molar: **Extracting #1 and 17**
148. drainage of head and neck goes to the **superficial?? not deep?** cervical lymph nodes
149. **Glossopharyngeal** nerve and other structures listed: describes **THIRD BRANCHIAL ARCH**
150. What are two important factors of **caries formation**: **INSOLUBLE Dextran** (as well as Levan) and the enzyme **glucosyl transferase**
151. inorganic component of enamel: **Hydroxyapatite**
152. autosomal dominant trait with 50% penetrance: will **affect 25% of offspring**
153. **rotation: inferior** compartment of TMJ: **translation: superior** compartment TMJ
154. size of pulp chamber affected within a tooth affected by: **HISTORY OF TOOTH**(caries, erosion etc).. another answer choice was location within the arch but I dont think that is right
155. **number of pulp horns in Md 1M: 5** (1 horn for each cusp)
156. tooth that is wider mesiodistally than incisocervically: **tooth E (primary central incisor) & applies to all primary anterior teeth**
157. **mesial** side of **Md canine**: approximately **straight** with the long axis of the tooth
- a. **which side of which canine is most concave/convex?** Max canine is most convex on the mesial
158. which organ stores in (**secretory**) **colloid follicles**: **Thyroid**
159. Someone taking **STATIN**, which enzyme is inhibited in this patient: **HMG Co-A reductase (lowering cholesterol)**
160. **Primary Mx 1M** mostly similar to: **permanent Mx PM**
161. When feeling infection by **tooth 3**, what bone are you palpating as well**inferior border of zygomatic**
162. Primary teeth erupt occlusally and **BUCCALLY**
163. First (*primary*) tooth erupt. **Md CI**

164. order of eruption of primary teeth: **CI → LI → 1M → C → 2M**
165. direct source of ATP in muscle contraction: **Creatinine Phosphate → Creatine + inorganic phosphate**
166. **Glucokinase and Hexokinase** are similar in all of the following **except**: **Km (high Km (low affinity)) = Glucokinase; lower Km (high affinity) = Hexokinase**
- glucokinase is found in liver and the brain
167. Fatty acid transported in blood by way of **CHYMOTRYPSIN**
168. patient on **diuretics**: works by **inhibiting absorption in loop of Henle**
169. **what attaches to lingula?** Sphenomandibular ligament
170. what separates **thalamus** of diencephalon: **THIRD VENTRICLES**
171. Respiratory center: stimulated most by high PCO₂, located in medulla
- peripheral chemoreceptor is stimulated by both PCO₂ and PO₂
172. atmospheric pressure is 250mmHg, what is the partial pressure of oxygen? 50mmHg(since air is 21% Oxygen so multiply 250 by .2)
173. **anemia** can be caused by: **folic acid deficiency**
174. separates **greater omentum from lesser, gastroepiploic artery ??**
175. something about **masseter/jaw jerk reflex CN V**: I believe it involved in closing and stretch reflex will **stimulate contraction of masseter**
176. injection by palatal of #4 (**Mx 2PM**) will anesthetize **greater/anterior palatine nerve**
177. brittle and mottled tooth with white brown spots: describing **Fluorosis**
178. **phenylketonuria**: **inability to hydroxylate phenylalanine sufficiently**
179. involved in **activation of insulin**: **tyrosine** since I think insulin is tyrosine receptor mediated
180. mobilization of glucose based on ACTIVATION of PROTEIN KINASE A
181. **cholesterol** is major substance other than triglyceride that is in cell membrane
182. bond btwn monomeric nucleotide: **phosphodiester**
183. bonding of glycoprotein formation: NO (??) glycosidic bond
184. Involved in bonding of tertiary structure of protein: **Cysteine (SH bonds)**
185. endotoxin: LPS
186. release IL-1 and TNF-alpha: Activated Macrophage
187. irreversible cell process: I put **Karyolysis of DNA** (fatty liver **(reversible)**) was also an option and not sure its reversible so I put karyolysis---**YES IT IS REVERSIBLE!!!!!**
188. dilaceration: root and crown not in a straight line, curved
189. increase in blood pressure due to: **ARTERIOLES**
190. fungi cultured on **SABOURAUD AGAR**
- a. 2 diff q about the 2 diff forms of dimorphism

- Dimorphic fungi are fungi which can exist as mold/hyphal/filamentous form or as yeast
 - Most common dimorphic fungi: BCH -- Blasto, Coccidio, Histo
191. N acetyl muramic acid in peptidoglycan
- a. N- something → golgi body?
192. Alzheimer's and Parkinson's are causes of dementia: **True**, usually diagnosed before age 50
(**false**, Alzheimer's is after age 50)
193. Description of molars and incisors (such as Hutchinson's teeth and mulberry molars):
describing syphilis
194. Hematemesis: **due to esophageal varices rupturing**
195. With edema: know hydrostatic > oncotic pressure
196. Multiple myeloma: punched out radiolucencies I believe the question dealt with
- Can find Bence Jones Proteins in urine
 - Russell's bodies are also found in pts with multiple myeloma
197. Question on osteoporosis: decreased amount of calcified material is what causes it
198. Salk: Inactivated vaccine
- Bordetella: give killed active vaccine
 - Toxoid: inactivated toxin
199. Asked about which is false of cytochrome: **uses Co in one of sites (uses iron)**, oxygen is electron acceptor, metabolizes toxic substances something else... don't remember the answer of which was false
200. How do you sterilize something that is heat sensitive: ethylene oxide (can also use glutaraldehyde)
201. How do you sterilize something that is corrosion sensitive: **DRY** or AUTOCLAVE
- we can also use chemical vapor to sterilize corrosion sensitive instruments
202. Virulence factor of some bacteria is: spore formation
203. Villi made of microtubules
204. ATP activity in muscles on MYOSIN HEAD
- a. something about troponin I or inhibiting this?
205. What affects speed of contraction of muscle: weight of the load I believe
206. Type 1 collagen is main collagen in dentin
207. Nissl bodies: RER in neural substance
208. Contacts considered undesirable: MEDIOTRUSIVE
209. What supports TMJ: superior head of lateral pterygoid
- a. protrusion → superior head of lateral pterygoid? inferior head of lateral pterygoid is attached to condyle

210. if you decreases extracellular K content, what happens to charge of membrane? not change? hyperpolarize?

211. What is NOT in the piriform recess: **External laryngeal nerve**, internal laryngeal nerve, thyroid cartilage, etc.?

212. Right atrium has? **Crista terminalis**

213. Hypertension is caused by **VENTRICULAR HYPERTROPHY**

214. What keeps glucose in the cell? **HEXOKINASE**

215. Nisseria and H. influenza have what in common? Capsule, pilli, etc? Ans: They both have endotoxin!!

- N. gonorrhoeae = penicillin resistant, Beta lactamase and IgA protease; H. influenza = capsule

216. What is NOT in the normal flora? Nisseria, influenza, cornybacterium, candidia, **bordello pertussis**

217. **gamma-glutamyl carboxylase** is needed for coagulation

- gamma-glutamyl carboxylase is an enzyme that catalyzes the posttranslational modification of vitamin K-dependent proteins

218. What's the difference between hematoma and hemangioma

- **hematoma**: blood outside of BV
- **hemangioma**: abnormal collection of BV filled w/blood

219. Bone that makes the acanthoma of the eye? **ZYGOMATIC**

220. Artery supplying the upper lid of the eye? **SUPRATROCHLEAR**

221. Muscle that produces sound? Lateral AND transverse cricoarytenoids

- what muscle tenses and elongate the vocal cords (ans: crico**thyroid**)

222. Muscle involved in clenching? **Masseter**

223. Functions of the liver are all except? Glucose control, gluconeogenesis, **digestive enzymes**, filtering of blood

224. Fluorosis effects? Dental enamel, cartilage, AND bone

225. Radiolucent line by the cheek? May have been due to a suture or a fracture

226. Bone lesions with hypergammaglobinemia? **Multiple myeloma**

227. What about scarlet fever causes a rash? Pyrogenic endotoxin, M protein, O or S streptolysin (not sure what the right ans was) **Pyrogenic EXOtoxin** (aka: erythrogenic toxin)

- scarlet fever (caused by Strep pyogenes - Group A strep) extra info: It could also cause late complications such as glomerulonephritis and endocarditis leading to heart valve disease

Delayed eruption causes permanent tooth to be on which side? Ans: Lingual Side!

- **Dental findings in child – underdeveloped Mn w/ an overdeveloped Mx, delayed eruption & retained deciduous teeth**

when mom is infected gonorrhea, baby will get what? Ans: *Ophthalmia neonatorum: A very serious complication of an infant delivered of mother with gonorrhea*

newborn has same IgG as mom, where did it come from? **Breast milk** or transplacentally etc
substrate for thrombin: Prothrombin and Factor X

lots of uric acid or urea or nitrogen removal

know the 4 principles in ethics (easy 4~5 Qs in testlets)

what lymph node follows external jugular vein: *superficial cervical node*

- Deep Cervical Node runs with the internal jugular vein

what lung dz predispose to asthma attack: *Recurring bronchial asthma attacks may predispose pt for future emphysema****

articular eminence covered by what : *Fibrous CT on the posterior side*

temporalis m: connects to the coronoid process

low carb diet (repeated): **low level of malonyl; why?** b/c you want less ketone bodies forming!!!

which foramen is not made by 2 bones (i.e. jugular foramen, infraorbital fissure etc)

that is not osteoporosis treatment: estrogen, calcium bisphosphonate etc

peptidoglycan linkage (alpha or beta 1,2/1,4 etc): **ANSWER: Beta 1, 4**

dextran related: product of two glucose molecules

- Levan: product of two fructose molecules

Canine guidance and where md and mx canine occlude/touch

Tome's granule: *found in radicular dentin and lies just beneath the cementum, and distinguishes root dentin from crown dentin*

- *Each tubule contains a cytoplasmic process (Tomes' fiber) of an odontoblast*
- *Dead tracts are tubules with dead cytoplasmic fibers in them*

Type 1 t-helper produces what (ex. IL-2,4 TNF-a etc)

- *Th1: release IL-2 & IFN-gamma :: Cell mediated immunity – IL-2 activated CD8, NK Stimulate proliferation & cytotoxic responses*

primary md first molar # cusps and roots:

3 Roots (root structure corresponds to that of perm Mx M1)

Bicuspid (2 main cusps = MB & ML, 2 indistinct distals)

- *MB cusp > ML cusp*

T12 - descending aorta

- **Mnemonic:** i 8 10 eggs at 12 → IVC @ T8, Esophagus @ T10, Descending aorta @ T12

squam metaplasia at : *Obstruction of the bronchial tree along w/ squamous metaplasia (Chronic Bronchitis)*

preganglionic parasymp passes which foramen in skull: Ans: foramen ovale

ectoderm/endoderm/mesoderm origin

brachial 1st arch structures

otic ganglion which nerve synapses : *pregang PS from CN IX*

1. content of submandibular triangle: anterior and posterior digastric and inf body of mandible
- carotid triangle: superior belly of omohyoid, posterior belly of digastrics, and anterior SCM
2. d and l version of amino acid in peptidoglycan: alanine
- D-alanine is for bacterial cell wall; L-alanine is found in humans
3. case on 7 year old with small palpebral fissures and weird low nose (fetal alcohol syndrome) who has signs fo abuse (report), i think it also asked how many teeth present at that point
4. testlet: another case of a fat 9 year old kid with hypertension already, same shit about how many teeth present and what 3 diseases he was more prone to (diabetes 2, hypertension and metabolic syndrome were my choices)

5. testlet: woman that has had no saliva and mouth burns for that least 2 years> she also has erythema and crusties on the edges of the mouth (candidiasis i thought for **actinic cheilitis I LIKE THE LATTER MORE**). they ask you most likely diagnosis for lack of saliva (sjorgrens, they tell you they biopsied the parotids and its not making any saliva and submandibular had lymphocytic infiltrates, all) and she's also on dilantin (gingival hyperplasia)
6. testlet hiv uncontrolled with hep b and tb wants an implant. very obvious what tooth shes missing since they describe only the premolar with a very small lingual cusp so its the end one thats missing. and an ethics question about what should you tell the dude. give him implant information but also warn of the prognosis given his hiv status (I put that he has stopped taking hiv meds and his ability to fight a possible infection after the surgery is compromised)
7. cholesterol is mainly transformed to (options were cholic acid, bile pigment, sterol and something else, I guessed cholic acid and i think its right based on wikipedia since its a bile acid and cholesterol gets transformed to bile in liver)-**it really depends what they are asking. Cholic acid is the precursor to the formation of bile salts!**
8. which muscle helps stabilize the tmj when you close up or something like that (i put temporalis since its the muscle that retracts (others elevate or aid chew) not sure other options were both heads of lateral pterygoid and maybe the medial as well
9. testlets were easy and they were about 100 questions i would say all combined
10. occlusion a bunch of easy ones and two or three not so easy ones that wanted to know the non working interferences on what incline/cusp
11. Blastomyces dermatitidis characteristics answers included heat resistance spherophore sothing zoophilic. organism and cant remember the rest
 - causal agent of **blastomycosis**, an invasive and often serious fungal infection found occasionally in humans and other animals in regions where the fungus is endemic.
12. somethign abut osteoclasts and asked you what cell/lineage and i put macrophages, forgot what other options were there that i was like na and put that. osteoclasts are from monocytes and so are macrophages so bam
13. insulin and insulin like receptors on cell, the only i answer i though was correct was tyrosin kinase which is right accourding to wiki
14. difference between the 1st and 2nd max premolar; either longer or shorter central groove thing and more or less supplemental grooves. i knew there were more supplemental grooves but i wasn't sure on the central groove an i think i put shorter-**2nd Max PM have a shorter central groove but MORE SUPPLEMENTAL GROOVE**
15. some questions i had never seen before about immunoglobulins and there were Vh1Lh1, Vh1 only, 2 CH3, one Ch3 and Ch2. have no idea what they were talking about i thought maybe heavy and light chain so i poot Vh1 and Lh1
 - How many gene combinations to make variable heavy chain? a. 1 b. 2+ (this would apply to light chain which has the mu and kappa genes) c. 3 (is it not 3 due to the VDJ genes?) -- I agree with this. d. 4
16. **Amyloidosis:** rare disease that occurs when a substance called amyloid builds up in your organs. Amyloid is an abnormal protein that is usually produced in your bone marrow and can be deposited in any tissue or organ.

Aug 20, 2014:

1. Testlet: kid died, rattlesnake bite. Tetracycline staining at what age? Ans: Tetracycline staining occurs during calcification!!
Bit on lateral arm = radial nerve
2. Testlet: jaw of mandible has ecchymosis = hematoma, **angioma?**

- 3.GI cancer = what else is there? –tubular, gastric ulcers, etc?
- 4.Uticaria, what microbe causes it usually? – trichophyton?
- Trichophyton is the common cause for athlete's foot!
- 5.What enzymes in liver give advantage for glucose something? Ans: glucokinase
- 6.Root formations times on permanent teeth (2-3 years after eruption)
- 7.What artery supplies the posterior half of hard palate? PSA and MSA
- 8.Testlet: wound on part spine, what organs can also be effected? – Kidneys
- 9.Which part of colon does vagus supply? Transverse colon
- 10.Muscle for bruxism – Masseter
- 11.Occlusion questions
- 12.Latero and Mediotrustive shit
- 14.All of these are posterior to the arch except? (pancreas, **right kidney**, last 2/3 of duodenum. Not sure, I put last 2/3 of duodenum)
- 15.Myasthenia gravis is usually involved tumor from where? Ans: Thymoma
- 16.Graves Disease has what features of TSH, T3 and T4? High T3 and T4 but low TSH
- 17.Tetlet: Kid has fluorosis, pick up to 3 answers. What are the 3 parts where u see staining in? – Dentin of Molars, enamel of premolars, long bones, nails, etc?
- 18.Calculating age based on teeth
- 19.Fractured left condyle. Contralateral side of which bone would have the fracture? Weird questions
- 20.Which bone is in the middle cranial fossa? Ans: temporal bone
- 21.Anterior cerebral artery supply areas (goes to the frontal and parietal lobe)
- 22.Preganglionic to otic by lesser petrosal
- 23.Dentures only in anterior. What nerve is responsible? –lingual, mental, etc? **DONT KNOW**
WHAT THE FUCK THIS QUESTION IS ASKING
- 24.Weird question gamma-carboxy glutamate binds with what for clotting? –factor 8, **Calcium**, etc
- Involved with Prothrombin
- 25.Which organ has activated PCK? Brain, muscle, liver, etc **DONT KNOW WHAT THE FUCK THIS IS ASKING**
- 26.Body does something with glucose in starvation? –Liver
- In starvation, fasting, and diabetes Mellitus, the amount of available glucose is low. In these situations, fatty acids from adipose get transported to the body's tissues, including the liver.
- 27.What cycle does not happen in the liver (biochem shit) **Maybe Calvin Cycle?**
- 28.Malnourished starving person will have pitting edema. Why? –high BP, low sodium, low serum something, etc
- 29.Person with abscess on tooth. Drained and smelly. What bacteria caused it? **Strept Pyogenes?**
- 30.Multiple Radiolucent bone things (punched out) are symptoms of what? Multiple Myeloma
- 31.What is the most active in osteogenesis? Osteoblasts
- 32.Exudate, what cells are in it? **Eosinophils??** not Neutrophil?
- 35.Typhus bacteria? –Rickettsia typhi (yes this is correct); Typhoid fever: caused by Salmonella bacteria
- 36.Testlet about woman found dead. Described shit about her body to you. Blood in her nose from what? Epistaxis
 - a.Overgrowth vagina something – Leiomyoma
 - b.Lateral shift in spine – Scoliosis
- 37.Testlet: shit happened around eye. What bones involved? KNOW bones of orbit
- 38.Doing surgery, pierce something and facial expression is bad. –Hit parotid gland, did something else, etc-->Ans: Temporary drooping of the face and eyes
- 39.What nerve brings PS to submandibular? –Greater petrosal?
- 40.PS to something in the lower body? Vagus Nerve
- 41.Lower motor neuron cells bodies originate: ventral horn
- 42.Origin and insertion of sphenomandibular ligament? –Lingula and spine of sphenoid
- 43.What ligament keeps condyle tightly attached in lateral movement? Ans: temporomandibular joint
- 44.RA what is effected first? –**synovium**, articular cartilage, etc?

45. Easy question on difference between lateral and central incisors?
46. Lingual is bigger than buccal in Max 1st molar
47. Mandibular 1st molar = 5 pulpal horns
48. Which teeth most likely has 2 canals? –mandibular distal root, max 1st PM buccal root, etc MB root of Mx 1st Molar or M root of Mand 1st Molar
49. Primary lower 2nd molar – what root is longer? Lingual
50. Which cusp of the lower primary 1st molar is tallest? ML cusp
51. MD cross section of Max central incisor? Triangular shape
52. Mand posterior teeth Proximal shape = rhomboid
53. MD cross section of max 2nd PM – MD is bigger/wider, FL bigger wider? Oval shaped with Broad BL and narrow MD
54. Antibiotic prevents RNA polymerase binding to DNA? Rifampin
55. Know congenital missing teeth; Max 3rd/Max later/Mn 2nd PM
56. KNOW PM and canine shit
57. Which PM has a crescent shaped occlusal surface? U 2nd lower PM
58. Contact of mesial of max canine? Middle 1/3
59. Which part of which canine has a concave shape from the tip to the cervical? Mesial of mand canine
60. Difference between max and mand canine?
61. Which way the crowns of the lower molars lean? Lingual
62. Groove form the mesial pit of the max 1st molar that disappears into the mesial surface? Mesial marginal groove
63. Enzyme deficiency in SCIDs? Ans: Adenosine Deaminase; SCID: genetic disease characterized by the absence of T-cells which result in defective antibody response from B and T cells
64. Extracted 3rd molar with clousted ovoid things –
65. Max molar gum area with yellow spots – sebaceous glands?
66. Where are serous demilunes? Sublingual (and submandibular gland)
67. How is iron transferred in blood? Ans: transferrin
68. How is oxygen measured in blood? Hemoglobin
69. Know everything about TMJ. Separate cavity parts and general shit
70. Pterygomandibular raphe origin and insertion? attached superiorly to the hamulus of the medial pterygoid plate and inferiorly to the posterior end of the mylohyoid line of the mandible
71. Teeth drainage location
72. Spinal nerve shit - gray and white rami, splanchnic nerves, etc
- white rami has the **pre** ganglionic going to ganglion and gray has the **post** ganglionic going to rami- also the gray is at every level of spinal cord while the white is only at the thoraco-lumbar level
73. Which edge of the tooth is sharpest? Gives bunch of anterior edges
74. Bacteria in plaque
75. All of these but one cause skin infections...
76. Lots of contact questions
77. Ligamentum teres, ductus arteriosus. Know what's in adult and fetus.
78. Comparisons on cartilage and bone – cartilage has no blood supply, apposition and interstitial growth, etc; bone: blood supply and only appositional growth
79. Cells in acellular and cellular cementum
 - a Secondary cementum?
 - b. Blood supply?
80. Where do the PDL form from? Ans: Dental sac (or dental follicle)

81. What fibers form the PDL? Ans: alveolar crest fibers, horizontal fibers, oblique fibers, apical fibers, interradicular fibers, and transeptal fibers

82. What is the biggest sinus in the head? Maxillary

Aug 22, 2014:

.Development of face, I put frontal and 1st arch? **I AGREE!!!!**

When when we have proliferation w/out differentiation. I put anaplasia, didn't know what else. **I agree!!!!**

.Histology of kidney tubule, where it uses most ATP in kidney (**Proximal Tubules**). Lots of kidney questions, ex if acute bleeding kidney should do this except, I put it shouldn't stop secreting renin.

.Which part of salivary gland epi (ex intercalated duct) would resemble which part of the nephron, (like PCT). I had easily 30 kidney questions.

.Contour line of owen in dentin=line of retzius in enamel

Wtf is glutination or something like that in some parts of CNS. I had no idea

- **Don't know what he is asking. But I found something similar: Agglutination techniques are used to detect antibodies produced in response to the rubella virus or to the rheumatoid factor. There is an excellent LA test for cryptococcus. Agglutination techniques are also used in definitive diagnosis of Group A streptococcus.**

.many jaw movements questions, occlusion...

.how many genes needed to for a complete heavy chain variable region 1,2,3,4,5. I picked 4. No idea -**I DISAGREE; there is 3**

.polymyalgia rheumatica testlet, symptoms, characteristic and shit

- Polymyalgia rheumatica (sometimes referred to as PMR) is a common cause of widespread aching and stiffness in older adults (over the age of 50). Because PMR does not often cause swollen joints, it may be hard to recognize. PMR may occur with another health problem, giant cell arteritis.
- typical symptoms (what you feel) of PMR are aching and stiffness about the upper arms, neck, lower back and thighs. Symptoms tend to come on quickly, over a few days or weeks, and sometimes even overnight. Both sides of the body are equally affected. Involvement of the upper arms, with trouble raising them above the shoulders, is common. Sometimes, aching occurs at joints such as the hands and wrists.
- PMR should not be confused with fibromyalgia, a poorly understood health problem that affects mainly younger adults.
- If your doctor strongly suspects PMR, you will receive a trial of low-dose corticosteroids not NSAIDs.

.gonadotropin: hormones released by the anterior pituitary

.normal flora of the lower gut, Ecoli and streptococci I put

.bunch of transmission, conjugation etc question. In which one the most amount of gene can be transferred, which one between to cocci.... Ans: Conjugation

.what vitamins are deficient in enamel hypoplasia or like collagen synthesis. I put D and C

- Note: Vit A is the main one for enamel and Vit C is the main one for Dentin

.What gene and where is amelogenesis imperfecta affected.

- amelogenesis: a disorder of tooth development. This condition causes teeth to be unusually small, discolored, pitted or grooved, and prone to rapid wear and breakage. Mutations in the AMELX, ENAM, and MMP20 genes cause amelogenesis imperfecta.

.How do disinfectants work, cell wall interference or so

- Disinfectant mostly knocks out the cell membrane and antiseptics denatures proteins whereas sterilization technique denatures proteins or alkylating nuclei acids

.Where's the lingual canal of max molar located. I put slightly distalfacial to medio lingual or somethin like that

.Falx cerebri question like superior sagittal and something else...

- where do the superior and inferior dural sinus drain (ans: falx cerebri)

- Falx cerebri is made up of dura mater
- .What's HBV covered with? Host membrane?
- HBV and HCV have carrier!
- .Hyaluronic acid, was an option like dense compact molecule or something like that
- an anionic, nonsulfated glycosaminoglycan distributed widely throughout connective, epithelial, and neural tissues. It is unique among glycosaminoglycans in that it is nonsulfated, forms in the plasma membrane instead of the Golgi, and can be very large, with its molecular weight often reaching the millions. One of the chief components of the extracellular matrix, hyaluronan contributes significantly to cell proliferation and migration, and may also be involved in the progression of some malignant tumors.
- .Alzheimer's is a type of dementia with amyloid bodies (**TRUE**)
- .Weird question, intercellular protein degradation, bc of amino terminus, disulfide bonds, some other weird stuff. I put disulfide bond cause I thought it might have to do with ubiquitination but def look it up.
- .which bonds don't break when proteins get denatured, I put peptide bonds
- .Necrosis vs apoptosis question. It was asking which cell doesn't break down in foamy appearance I put when there's nutrition deficiency
- .Necrosis vs apoptosis question, it was a pharm question, I forgot about them completely but know what happens when you give an alpha-1 blocker
- **Can't find the connection. Here's what I found from a journal article: The apoptosis of prostate cancer cells induced by quinazoline-derived alpha1-adrenoceptor antagonists (doxazosin, terazosin, prazosin) counteracts cell proliferation and may have the potential of reversing or delaying prostate cancer growth.**

1. What develops from Rathke's Pouch? Ans: Anterior pituitary gland
 - Diencephalon contributes to Rathke's pouch
2. What is a target tissue of parathyroid hormone? Options were: blood, thyroid, small intestine, one more I forgot. Ans: Small Intestine (can be kidney and bone)
3. Which are Class II + presenting cells? **CD4 T cells??**
4. What is true of smooth muscle cells? Do they have sarcoplasmic reticulum? Does their Ca bind to troponin? **Later is false. troponin is not found in smooth muscle**
5. -know dental anatomy of course.
6. if a person has their upper and lower canines touching when in laterotrusive and you extract the maxillary canine which occlude now in laterotrusive.
7. -what decreases plasma osmolality? Options: vasopressin, angiotensin II, ADH, saline, (**vasopressin or adh?**)
8. what is a common cause of Dysgeusia (aka distortion of the sense of taste). **Some examples I found are: tooth decay, sinusitis, Sjogren, copper deficiency, B12 deficiency, and glossitis**
9. how does ADH increase water retention? Water is reabsorbed at the distal tubule or collecting duct!!
10. I had 8 test let cases, some concerns diabetes mellitus, HIV...
11. -what kind of epithelium is intercalated ducts? Ans: simple cuboidal; found in salivary gland and pancreas
12. -which antimicrobial binds ergosterol? Ans: Nystatin or Amphotericin B

13.what is the difference b/w glomerular or juxta nephron and a cortical nephron? Ans: **The length of the thin portion of henle. Cortical is shorter**

14.-what is cancerous when the supraclavicular nodes are messed up? Choices included: stomach, breast, skin from head n neck..

- The supraclavicular lymph nodes are a paired group of lymph nodes located on either side in the hollow of clavicle close to where sternum joins it. It is the final common pathway of the lymphatic system as it joins the central venous system. They oversee transport of the lymph from the thoracic cavity and abdomen. Some malignancies such as lung, head and neck, breast, oesophageal, gastric, pancreatic, gynecologic, and prostate cancers have a propensity to metastasize to supraclavicular lymph nodes

15.what good attached jejunum n ilium to posterior abdominal wall Ans: mesentery

16.what's the difference b/e hepatic portal veins and the veins that drain into IVC? portal vein drains blood from the spleen, intestine, etc to the liver and hepatic vein drains the deoxygenated blood back to the IVC

17.what drains from the stomach? via portal vein (directly or indirectly via gastric or gastroepiploic veins from the great curvature, lesser curvature, and the fundus of the stomach)

18.what produces myelin sheath in the CNS? Ans: oligodendrocyte

- PNS equivalence: Schwann cells

19.similarity b/w type 1 n 4 hypersensitivity?

- type 1 hypersensitivities are simply what we would call allergies. allergic reactions begin within seconds after contact with the allergen and last about half an hour. the initial meeting with an allergen produces no symptoms but it sensitizes the person. APCs digest the allergen and present its fragments to helper T cells as usual. in susceptible individuals, an abnormally high number of these helper T cells differentiate into IL-4 (interleukin 4) secreting TH2 (T helper 2 cells) cells. IL-4 stimulates B cells to mature into IgE secreting plasma cells. IgE is the "trouble maker" of the antibodies. When it binds to mast cells and basophils, they release a flood of histamine and other inflammatory chemicals that can constrict the respiratory passages if it happens at the bronchioles. anti histamines can be used to reverse the effects. Type 4 or delayed hypersensitive reactions are slower to appear (1-3) days. the mechanism is basically that of a cell mediated immune response which depends on TH1 and cytotoxic T (Tc) cells. Inflammation and tissue damage comes about through the action of Tc cells and cytokine activated macrophages. Cytokines are the major mediators of these inflammatory responses so unlike type I hypersensitivities you can't reverse it with anti histamines. Corticosteroids are used to provide relief. For example poison ivy can cause type IV hypersensitivities. the poison ivy acts as haptens, which are not antigens but once bound to a protein or something else are able to induce an immune reaction. So after the poison ivy diffuses through the skin and attaches itself to self proteins they are perceived as foreign by the immune system. Delayed hypersensitivities have a number of protective reactions particularly effective against facultative intracellular pathogens, which include salmonella and some yeasts. FIPs are phagocytized by macrophages but are not killed and may multiply inside the cell unless it is activated to killer status by gamma interferons and certain other cytokines. so the enhanced release of cytokines during type IV may play an important protective role.

20.borciella dermatans? Idk I may be making that bacteria up but something that sounded like that.
NO FUCKING CLUE!!

- 21.fungal infxn of bv's = mucormycosis
- 22.if u increase alveolar volume while breathing does the pressure increase or decrease? Ans: Decrease
- 23.patient with emphysema, increase or decrease compliance? Ans: Decrease compliance
- 24.how do u activate classical pathway? So something about C1q I out it binds to Fc part of antibody (IgG or IgM) but that was a guess.---**I agree!!!**
- 25.how does hep A cause jaundice? Old q- I put fibrosis of the liver
- 26.which is latent? = varicella zoster
- 27.salivary duct biopsy showed lymphocitic infiltrates, what's the problem? I put autoimmune.
- 28.what does carotid sinus monitor?
- aortic and carotid **sinuses** respond to blood pressure whereas aortic and carotid **bodies** respond to oxygen and different gas concentrations
- 29.Which tmj ligament prevents retrusion? Ans: temporomandibular ligament
- 30.What does inferior head of lateral pterygoid do? I put protrude mandible
- 31.What does polydipsia in diabetics mean? excessive thirst
- 32.Initial bicarbonate:carbonic acid concentration is 20:1, it changes to 10:1. What is that? compensated alkalosis, compensated acidosis, uncompensated alkalosis, uncompensated acidosis. I put compensated acidosis.

August 23, 2014:

I have horrible memory but my test had a pretty good deal of repeats. Definitely remember the concepts. Alot of my questions were the same thing but asked in a less direct way.

know shapes of teeth from occlusal etc. i had many questions asking what the shapes of premolars were.

Know what exactly happens with myasthenia gravis. I had like 4 questions in a testlet asking about what is targeted by myasthenia gravis and what the medications do

Question about what organ would regulate alkalosis. Lung wasn't an option (respiratory) but liver, heart, kidney and two other ones that didn't make sense were options. I put kidney. Since i remember something about the kidney regulating metabolic acidosis in d1.

I had 4 questions about what's the biggest cusp on perm max 1st molar ...ML

question about which cusps would wear in a bruxer. also had one about which would wear in a bruxer with a posterior crossbite = opposite of the regular which is lingual of uppers and facial of lowers .

- 1) What nerve goes between palatoglossus and palatopharyngeus? **Glossopharyngeal I think. Vagus wasn't a choice (IT'S CN IX)**
- 2) Where does the tip of the tongue drain? **Submental lymph node**

- 3) The central portion of the retrodiscal shit of TMJ has
- Which component of the TMJ has the most vasculature and innervation? Ans: retrodiscal tissue
 - retrodiscal tissue (aka bilaminar zone) is often a major contributor to the pain of Temporomandibular Disorder (TMD), particularly when there is inflammation or compression within the joint
- 4) Know urea cycle
- 5) What type of enzyme is fumarase? **Dehydrogenase**
- 6) What kind of protein is associated with membrane lipids? **Non-polar**
- 7) Difference between primary and permanent maxillary central. Same for canine
- 8) Few questions on pulp cavity shapes
- 9) Know number of pulp horns
- 10) Know parasympathetic nuclei and ganglia stuff
- 11) Where does the methyl group of choline come from? **Methionine**
- 12) The root of the canine is concave on the facial and lingual. **Choices were for max. canine, mandib. Canine, both, or none (Ans:NONE!)**
- Primary central incisors exhibit a prominent cervical ridge both of the facial and lingual surfaces
- 13) Restriction endonucleases cleave what? Ans: DNA fragments
- 14) What is the function of telomeres? **To preserve the length of chromosomes**
- 15) Tome's granular layer is found in? **Dentin near cej**
- 16) Cholesterol is stored where in body? Ans: Liver
- 17) When the phosphate leaves the myosin head what happens? It re-cocks
- 18) Smooth muscle has calmodulin
- 19) If fluoride concentration is .05% what is that in ppm???? $(0.05)*(10,000)=500$ ppm ****ALWAYS multiply percentage with 10,000 to get to PPM*****
- 20) You climbed mt. Everest and the pressure is 250mmHg, what is the partial pressure of oxygen? I think you multiply 250 by .2=50 mmHg (**TRUE**)
- 21) Tensor veli palatine is attached to hamulus
- 22) Branches of celiac artery Ans: Splenic artery
- 23) Branches of abdominal aorta? **Celiac and inferior mesenteric**
- **What does the abdominal aorta not give off? (choices: Celiac, INFERIOR PHRENIC, superior mesenteric, inferior mesenteric).**
- 24) What is irreversible? **I put karyolysis**
- 25) Midbrain is from mesencephalon
- 26) G1 is most variable phase
- S is involved with DNA replication
- 27) Pt is drunk and stumbling, motor shit is fucked up what part of the brain is involved? **Cerebellum (its for voluntary movement)**
- 28) Rest position (aka postural position) is muscle guided
- Centric Relation: ligament guided
 - Centric Occlusion: tooth guided
- 29) What goes between hyoglossus and mylohyoid EXCEPT? Ans: Lingual artery
- 30) Radial nerve innervates? Tricep
- Biceps are innervated by musculocutaneous nerve
- 31) Difference between small and large intestine in terms of histo/anatomy
- Small Intestine: simple columnar with plicae circulares (found only in the jejunum), microvilli and villi and the presence of paneth cells. myenteric plexus in the muscularis externa and submucosal gland (found only in duodenum)
 - Large Intestine: simple columnar with goblet cells and no paneth cells. There is no more plicae circulares or villi but there is teniae coli in the muscularis externa.
- 32) HBV is an enveloped virus; Same goes with HCV and HDV!!!
- HBV and HCV have carrier states
- 33) What becomes latent in macrophages? **HIV**
- 34) Colon cancer most common in? **Recto sigmoid**
- 35) Cancers that most frequently metastasize to bone? **Prostate and breast**
- 36) Clostridium difficile infection leads to? **Pseudomembranous Colitis**
- 37) Macrostomia (WIDE MOUTH) is due to failed union of? **Max and mand processes**

- 38) Greater palatine artery supplies hard palate
 39) Type 2 diabetes associated with obesity and with people over age of 40
 40) What is used to treat candida albicans? **Clotrimazole**
 41) Which of these drugs inhibit DNA dependent RNA polymerase? **Rifampin**
 42) Anomaly between the 2 central incisors? **Mesioidens**
 43) External jugular vein runs with? **Great auricular nerve**
 44) Which of these are non-keratinized? **Ventral surface of tongue**
 - In another version of the exam, dorsal of the tongue is KERATINIZED
 45) Which of the following are purely mucous glands? **Palatine**
 - Purely serous: Von Ebner gland
 46) Bowman's capsule? **Double walled epithelial cup** something like that
 47) Which leukocyte is least common? **Eosinophils** (**Pick Basophil if this one is present as an answer choice**)
 48) 2 questions on testlets about patient who had dry mouth and what was the cause of it. **Medications**
 49) Which muscle tenses up when you clench your teeth after teeth are already in max intercuspsation to stabilize articular disc??? Ans: Masseter

- 1) Where in the body is lactase produced? **Ans: digestive system**
 2) Where is secretin produced? **Small intestine**
 3) Which of the following would lead to an increase in respiratory rate? **Alveolar acidosis**
 4) What type of disease is osteoarthritis? **Autoimmune**
 5) Pt suffered a fracture 1 month ago, what type of bone would you see? **Lamellar bone**
 6) Which neurotransmitter is seen in pain? **Substance P**
 7) Cytotoxic T cells need the cells that they work on to have what? **MHC I**
 8) Tay Sachs disease is associated with what? **Buildup of GM2**
 9) Artery seen in epidural hematoma? **Middle meningeal artery**
 10) Pt. suffered a stroke, which artery was involved? **Middle cerebral artery**
 11) Which nerve innervates the palmar surfaces of hand? **Median nerve**
 12) Depression is a risk factor for alzheimers
 13) Serotonin is associated with depression
 14) Which of the following is false concerning AIDS? **CD4 T cell count is not an indicator for how the patient is doing (I DON't KNOW about this; HIV does attach itself to CD4 T cells (TH1 cells))**
 15) When the infundibular stalk is cut, which hormone will no longer be produced? **Vasopressin or ADH**
 16) Which hormone reduces glucagon and insulin levels? **Somatostatin**
 17) Gonadotropin (aka ant pituitary hormones) stimulates secretion of? **FSH and LH**
 18) Which of the following is not needed for collagen production? **Folic acid (or Vit B9)**
 19) Which opening do both the facial and vestibulocochlear nerve pass through? **Internal acoustic meatus**
 20) Which bones make up the superior orbital fissure? **Greater and lesser wings of sphenoid**
 21) What contains the superior and inferior sagittal sinus? **Falx cerebri**
 22) Falx cerebelli is a fold of what? **Dura mater**
 23) What makes up the laryngeal prominence? **Tracheal cartilage**
 24) Sternohyoid and sternothyroid are innervated by? **Ansa cervicalis**
 25) V3 passes through what? **Foramen ovale**
 26) Vertebral artery passes through? **Foramen magnum**
 27) What creates cell-cell junctions? **Zonula adherens (aka intermediate junctions)**
 28) what adheres ergosterol? Ans: Polyenes (eg. Amphotericin B or Nystatin)
 29) which of the organs are not under anterior pituitary control? **Medulla of the Kidney?**
 30) 6~7 questions on pharm like alpha1,2 and beta 2,3 medication and actions; Asthma medication work on beta receptor; excitatory pathway: all 1s (alpha1s and Beta1s) and inhibitory pathway: all 2s (alpha 2s and beta2s)
 - alpha 1- increase smooth muscle contraction and mean arterial pressure
 - alpha 2- inhibit NE and insulin release
 - beta 1- increase cardiac output, HR
 - beta 2- increase glucose output, bronchodilation, vasodilation
 31) the stages of the viral infection what is the first stage? Ans: adsorption

- adsorption-->penetration-->uncoating-->Early transcription-->DNA synthesis and late transcription-->Late Translation-->Assembly-->Release of virus and lysis of infected cells (CYCLE REPEATS)

32) sets of lupus questions

- a Key features (CREST): calcinosis; Raynaud's phenomenon, esophageal dysfunction, sclerodactyly, positive ANA (Anti-DNA and Anti-Sm antibodies); b telangiectasia
- In a lupus pt: Increased erythrocyte sedimentation rates means what? Ans: high ESR=inflammation. but its not a good indicator of lupus activity)
- What are some signs of systemic lupus getting worse (choices were: face rash, ulnar deviation of fingers, clubbing of fingers...) (maybe when it starts affecting organs--**deformation and signs of arthritis?**)

33) complementary cascade process shit:

- The following are the basic functions of complement: Opsonization - enhancing phagocytosis of antigens Chemotaxis - attracting macrophages and neutrophils Cell Lysis - rupturing membranes of foreign cells Agglutination- clustering and binding of pathogens together (sticking)
- Classic pathway: activated by antigen-antibody complexes with IgG or IgM
- Alternative: activated by the bacterial LPS
- Lectin: activated by microorganisms containing cell-surface mannan (a polymer of mannose)

34) bone formation and repair stage:

- Bone can be formed by either intramembranous (woven-->cancellous (or spongy)-->compact bone) or endochondrial ossification

35) osler's node and janeway.. something

- Osler's node: result from the deposition of immune complexes. associated with a number of conditions, including infective endocarditis. More tender than Janeway's node and are of immunologic origin (MAJOR DIFFERENCE BTN OSLER's and JANEWAY's NODE). can be seen in SLE or Lupus
- Janeway's node: non-tender, small erythematous or hemorrhagic macular or nodular lesions on the palms or soles only a few millimeters in diameter that are indicative of infective endocarditis. caused by septic emboli which deposit bacteria, forming microabscesses.
- Roth's spots: retinal hemorrhages with white or pale centers. caused by immune complex mediated vasculitis often resulting from bacterial endocarditis. Roth's spots may be observed in leukemia, diabetes, subacute bacterial endocarditis, pernicious anemia, ischemic events, hypertensive retinopathy and rarely in HIV retinopathy.

36) mycelium definition: the vegetative part of a fungus, consisting of a mass of branching, thread-like hyphae.

Aug 24, 2014:

1.What releases IL-1 and TNF-a? Macrophage

2.MHC Class I and II? CD8 and CD4 respectively

3.Where would CSF flow after arachnoid pili? Drains into ventricles

- Ependyma lines the CSF-filled ventricles in the brain and the central canal of the spinal cord. They are involved with the production of CSF. Choroid plexus is the one that produces CSF.

4.If you had to remove submandibular duct...what do you have to cut through? Mucosa+hyoglossus, mucosa only, mucosa and mylohyoid, etc. (**SNEAKY MF'ER-Came straight out of NBDE 1998 Question 80**)

5.What nerve does not send taste to the brain? Choices: vagus, facial, glosso, **trigeminal**

6.What does not cause systemic disease...? Histoplasmosis, candida, trycophyton? not sure; **ANSWER: TRICHOPHYTON**

- Systemic mycoses are fungal infections affecting internal organs. In the right circumstances the fungi enter the body via the lungs, through the gut, paranasal sinuses or skin. The fungi can then spread via the bloodstream to multiple organs including the skin, often causing multiple organs to fail and eventually resulting in the death of the patient.

7.What muscles does ansa cervicalis innervate? Ans: Sternohyoid and Sternothyroid

8.What forms dextrans (like components of it)? Just know its has glucose in it

- Levan: Fructose+Fructose

9. Premolar Questions –many!!! Know buccal, lingual cusp and if they are offset on mesial or distal.

- Buccal cusp of Max 1st PM: offset to the distal and Lingual cusp of Max 1st PM: offset to the mesial

- Mand 1st PM have the smallest FL of any posterior teeth

Differentiate between the 4 PMs What does 2nd permanent PM replace in primary dentition? Ans: primary 2nd Molar

10.Know laterotrusive, etc

11.Asked in many ways, vertical dimension change and how it alters cusp slope, etc; repeat question

- increasing vertical overlap can/may have taller posterior cusp
- Steeper the cusp, the greater overlap!
- an increase in horizontal overlap leads to a decreased ant guidance angle, less vertical component to mandibular movement ,and flatter posterior cusps
- an increase in vertical overlap produces an increased ant guidance angle ,a more vertical component to mandibular movement and steeper posterior cusps[taller th post cusps].

12. What is rocky mountain spotted fever? Ans: rickettsia rickettsii

13. Tallest cusp of primary mandibular 1st molar? Ans: ML cusp

14. What connects some weird ridge on the primary mandibular 1st molar? **NO FUCKING CLUE WHAT THIS IS ASKING!**

- primary mand 1st molar have a VERY DISTINCT transverse ridge

15. Know what dilacerations is: root and crown not in a straight line, curved

16. What happens to cells BEFORE it turns malignant? Ans: changes into another type of cells (aka metaplasia)-->dysplastic-->Neoplastic

17. What are the cells/what can you find in a benign neoplasm? Ans: metaplastic or dysplastic? **IDK**

18.What is foramen part of sphenoid bone? Ans: carotid canal (**DO NOT PICK OVALE AND ROTUNDUM**)

- Mandible does not contact the sphenoid bone
- In another version, hypophyseal fossa and carotid canal are part of the sphenoid bone

19. What does the nerves for taste travel through? **Infratemporal fossa**, pterygopalatine fossa, foramen Rotundum

20. Amelogenin = enamel matrix

21. Restriction endonuclease cleaves...? Cuts DNA

22. External Auditory Meatus from what embryological derivative? 1st Pouch

- Thymus and Inferior hyoid: third pouch

23. Carotid Triangle boundaries: superior belly of omohyoid, posterior belly of digastrics, and anterior SCM

- Submandibular triangle: anterior and posterior digastric and inf body of mandible

24. If you add to the incisolingual area of maxillary incisor, what will that change? **Increase overbite**,

increase overjet, decrease overjet, no change, etc.

25. Know the types of skin cancer and how it looks like

Testlet asked about a 1x1 brown crusted area, indurated on nose. What is it? Probably squamous cell carcinoma (other options: basal cell,**melanoma**)

- b/c melanoma is the only one that can give a color change!!!!

26. Where are cells that produce melanin located in skin layer?

- stratum basale

27. HOC Qs: FROM INCISOR-->2nd Molar

- MAX: JC, CC, CC, CM, CM, CM
- MAND: CC, CC, CC, (J)M, JM, CM, CM; (J): junction btn the cervical and middle 1/3

28. What does PTH affect? Ans: PTH affects bone and kidney and to small extent, small intestine

29. What is ADH and its effect? ADH is only active against distal tubules and collecting ducts; adjust blood volume/pressure

30. What is ACTH? polypeptide tropic hormone produced and secreted by the anterior pituitary gland. It is an important component of the hypothalamic-pituitary-adrenal axis and is often produced in response to

biological stress (along with its precursor corticotropin-releasing hormone from the hypothalamus). Its principal effects are increased production and release of corticosteroids.

31. What lies dormant in salivary glands? Herpes, measles, rubella, **cytomegalovirus**, etc not sure...

32. Lack of insulin, what happens as a result? Ans: Decreased lipid synthesis, increased glucose production, decreased potassium uptake,

Ethics questions were very straightforward and easy.

About 7-8 testlets

Aug 25, 2014: