1. You are analyzing gingival crevicular fluid from a patient and you find high levels of IgG and IgM present. What do you suspect?
   a. The patient has a significant level of gingival inflammation. **Correct**
   b. The patient is unable to make sIgA.
   c. The patient has excellent oral hygiene.
   d. all of the above
   e. none of the above

2. You determine that the saliva from a patient has a very low sIgA content. You know that this patient has no health problems. How can this (good health) be possible?
   a. The mucosal immune system often stops producing IgA in order to permit secretory component recycling.
   b. It is not unusual to find healthy subjects having a selective IgA deficiency. **Correct**
   c. The mucosal immune system often produces sIgD in place of sIgA with no ill effects.
   d. none of the above
   e. all of the above

3. How do IgG and IgM antibodies enter saliva?
   a. It is usually a result of extravasation secondary to an inflammatory event. **Correct**
   b. They are pumped into the ducts by acinar cells.
   c. It generally happens only when there is a traumatic blow to the head which results in bleeding in the mouth.
   d. none of the above
   e. all of the above

4. The secretory component is produced by __________ and serves as __________.
   a. macrophages, a complement receptor
   b. epithelial cells, a polymeric IgA receptor **Correct**
   c. B cells, an antigen receptors
   d. T cells, a type I MHC receptor
   e. none of the above
5. Specific recognition sites on tissues aid in the homing of lymphocytes. These are known as:
   a. vascular addressins **Correct**
   b. vascular interdoodles
   c. vascular homogrens
   d. superantigens
   e. none of the above

6. A gram negative bacteria enters the oral cavity, yet the lysozyme is unable to perform its function in the oral cavity. Why?
   a. Lysozyme acts on starches and has no effect on bacteria.
   b. Lysozyme acts only on yeasts.
   c. Gram negative microorganisms cannot be degraded by lysozyme. **Correct**
   d. Gram negative microorganisms are more resistant to lysozyme.
   e. none of the above

7. What is the primary function of myeloperoxidase?
   a. Involved in the oxygen-dependent cytotoxic system of neutrophils. **Correct**
   b. Involved in the oxygen-independent cytotoxic system of neutrophils.
   c. Protects the host by destroying hydrogen peroxide.
   d. all of the above
   e. none of the above

8. The ability for a lysozyme to lyse the peptidoglycan layer is referred to as:
   a. peptidolysase activity
   b. squamase activity
   c. killthesuckeracide activity
   d. muramidase activity **Correct**
   e. none of the above

9. The substance that protect against unwanted proteolysis by inhibiting the cysteine-proteases is
   a. cysteracoids
   b. cystatins **Correct**
   c. proteoloids
   d. askerdoodles
   e. none of the above
10. Sialoperoxidase (SP) is produced by acinar cells and is similar in function to Myeloperoxidase (MP) produced by what blood cells?
   a. T cells
   b. B cells
   c. Neutrophils Correct
   d. Doodlecells
   e. none of the above

11. Lysozyme function to:
   a. induce cationic-dependent activation of bacterial autolysins
   b. aggregate bacteria
   c. inhibit glucose uptake by bacteria
   d. all of the above Correct
   e. none of the above

12. Salivary factors that may result in adherence of oral bacteria to tooth surfaces are:
   a. amylases
   b. mucins
   c. proline-rich proteins
   c. all of the above Correct
   e. none of the above

13. Which of the following participates in nutritional immunity?
   a. lysozyme
   b. lactoferrin Correct
   c. histatin
   d. myeloperoxidase
   e. none of the above

14. Which of the following is not true about sialoperoxidase system?
   a. produced in acinar cells of parotid glands
   b. present in submandibular saliva
   c. readily absorbed to oral surfaces
   d. utilizes thiocyanate ion to form peroxide
   e. none of the above Correct
15. In considering the process by which oral microorganisms are regulated by SP/MP, place the following in the correct sequence:

1) oxidation of sulfhydryl groups of bacterial enzymes
2) secretion of SP by salivary glands
3) production of $\text{H}_2\text{O}_2$ by facultative aerobes
4) $\text{H}_2\text{O}_2$ and SCN$^-$ in the presence of SP and low pH yields OSCN$^-$ and HSCN

a. 1,2,3,4
b. 2,3,4,1
c. 3,2,4,1 Correct
d. 2,4,3,1
e. none of the above.

16. What are the advantages of testing saliva over other bodily fluids?

a. saliva is very easy to obtain
b. saliva collection does not create discomfort
c. saliva is sterile
d. a and b Correct
e. all of the above.

17. Which of the following contaminants of saliva is the most important to exclude from samples for testing for immunoglobulin concentrations?

a. minor gland products
b. bacteria
c. gingival crevicular fluid Correct
d. sIgA
e. none of the above

18. Two patients are in your office, one has asthma and the other has cystic fibrosis. Which of the following factors would be the most helpful in determining which patient has cystic fibrosis?

a. chondroitin A levels
b. stimulated parotid gland secretions
c. von Ebner gland secretions
d. very low labial gland secretions Correct
e. none of the above.
19. What does an increase in GCF indicate?
   a. increased gingival inflammation
   b. ovulation during the menstrual cycle
   c. a and b Correct
   d. minor salivary gland stimulation
   e. none of the above

20. Digitalis toxicity in patients can be determined by which of the following clinical signs?
   a. increased cyclosporin A in the saliva
   b. increased calcium and potassium in the saliva Correct
   c. decreased sIgA in the saliva
   d. decreased secretory component in the saliva
   e. all of the above.

21. Why isn't saliva used to diagnose disease more frequently?
   a. not all patients can provide sufficient saliva for the tests
   b. lack of general acceptance by physicians
   c. unavailability of many test kits
   d. b and c Correct
   e. none of the above

22. Why was the rice test sometimes effective in detecting lies?
   a. rice turns color when one lies
   b. a chemical in rice reacts with hormones produced during stress
   c. increased salivary flow during stress results in excess amylase that breaks down the starch in rice Correct
   d. guilt or anxiety decrease salivary flow Correct
   e. none of the above
23. How does sIgA function to protect mucosal surfaces?
   a. When it interacts with microorganisms the complement system is activated and neutrophils are attracted to the site of infection.
   b. The sIgA coats microorganisms and prevents them from adhering to mucosal surfaces. **Correct**
   c. sIgA induces an inflammatory reaction resulting in clearance of the microorganisms
   d. a and c
   e. none of the above

24. Why is mucin considered a double edged sword?
   a. When bound to oral surfaces, mucins allow bacteria to adhere to tissues
   b. When in solution, mucins aggregate bacteria and help to eliminate them
   c. When in solution, mucins are toxic to both tissues and to microorganisms
   d. a and b **Correct**
   e. none of the above.

25. Based on what components found in high concentration in saliva can we develop a vaccine against caries?
   a. sIgA **Correct**
   b. IgG
   c. IgM
   d. all of the above.
   e. none of the above.

26. Why do some microorganisms such as E. coli produce enterochelins?
   a. Enterochelins degrade sIgA
   b. Enterochelins neutralize IgA proteases
   c. Enterochelins are able to compete with lactoferrin for Fe3+ **Correct**
   d. Enterochelins bind sIgA
   e. none of the above

27. Which of the following is a function of lysozyme?
   a. aggregation of bacteria
   b. de-chaining streptococci
   c. inhibiting glucose metabolism
   d. all of the above **Correct**
   e. none of the above
28. You eat a meal. The actively metabolizing microorganisms produce hydrogen peroxide, consume oxygen, and produce acid. What system would protect you from developing caries by inhibiting bacterial growth and metabolism?
   a. complement cascade
   b. blood clotting factors
   c. heat shock proteins
   d. sialoperoxidase Correct
   e. none of the above

29. Denture wearers tend to have a problem with thrush because the dentures shield the tissue from what Candida albicans inhibitory component found in saliva?
   a. nitric oxide
   b. histatins Correct
   c. rhodamine isothiocyanate
   d. BT
   e. none of the above

30. Saliva is thought of as a mirror of the body. Which of the following suggests that saliva would make a good diagnostic fluid?
   a. It reflects systemic levels of natural substances in the body.
   b. It reflects systemic levels of therapeutic agents in the body.
   c. It reflects the effects of a variety of systemic diseases.
   d. all of the above Correct
   e. none of the above

31. What effects does aging have on quantity and quality of saliva output?
   a. little in the otherwise healthy subject Correct
   b. significant depression of salivary fluid
   c. significant depression of salivary proteins
   d. b and c
   e. none of the above

32. What is the difference between unstimulated and stimulated saliva secretion?
   a. unstimulated saliva confers the most protection to the oral surfaces.
   b. stimulated saliva is most important during mastication of food.
   c. stimulated saliva is primarily a product of the parotid glands.
   d. all of the above Correct
   e. none of the above
33. Person A normally produces 1000 ml/day of saliva, whereas person B produces 3000 ml/day. Person B then begins taking an antidepressant which causes his flow rate to drop to 1500 ml/day. Who now is at greater risk for dental caries and other such oral sequelae of salivary dysfunction, person A (1000 ml/day) or person B (1500 ml/day)?

a. Person A, because his/her saliva rate is lower than person B
b. Person B, because he/she is now producing an lower amount of saliva relative to his/her normal amount Correct

c. Neither, you must produce less than 1000 ml/day in order to experience oral sequelae of salivary dysfunction

d. Their risk is the same because they are producing approximately the same amount per day (between 1000 and 2000 ml/day)

e. none of the above

Decide whether the diseases below, causing salivary gland dysfunction are

a. local
b. inflammatory
c. systemic
d. extraterrestrial
e. none of the above

(Pick the best answer from this list for questions 34-39. Each response may be used more than once).

34. Sjögren's syndrome C
35. cystic fibrosis C
36. cancer of the salivary gland A
37. allergic parotiditis A/B
38. acute bacterial salidentitis A/B
39. alien extraterrestrial disease de
40. Radiation is known to:
   a. kill cancer cells
   b. cause long term DNA damage in salivary glands
   c. help bring the flavor out in preserved foods
   d. a and b Correct
   e. none of the above

41. What is/are the major advantage of using non-viral methods in gene transfers?
   a. safety Correct
   b. more efficient than viral methods
   c. more analogous to methods used by nature.
   d. all of the above
   e. none of the above
42. What is a primary target of gene therapy of oral cancers?
   a. the T4 antigen that is present in all oral neoplasms
   b. the rhinoviruses that are present in many oral neoplasms
   c. human papillomaviruses that are present in many oral neoplasms Correct
   c. all of the above
   e. none of the above

43. Gene transfer has made remarkable progress in molecular biology. Which one of these are clinical/practical applications of gene therapy:
   a. correction of inherited defects
   b. production of biomolecules with pharmacologic activity
   c. correction of acquired defects
   d. all of the above Correct
   e. none of the above

44. All of the following are true regarding gene therapy approaches, except:
   a. ribozymes act as enzymes to cleave RNA molecules at a specific sites
   b. genes can be transferred via viral and non-viral methods
   c. all promoters are equal and do not have specificity Correct
   d. non-viral transfer methods are via liposomes and macromolecular conjugates
   e. none of the above

45. Dr. Donna Scully put on her lab coat one day to try and find a cure for her patient, Foxx Molder, who has a cancerous lesion on his buccal mucosa. Molder’s immune system has been highly sensitized to common viral-based gene therapy systems. Which of the methods discussed in class might be the most effective gene therapy means of treating Molder.
   a. gene transfer utilizing liposomes
   b. utilization of a retrovirus specifically targeting the carcinoma receptor cells in Molder’s Mucosa
   c. utilization of negatively charged DNA mixed with large positively charged molecules linked to a specific ligand.
   d. utilization of an adenovirus-based system
   e. a and c Correct
46. Unstimulated basal level of saliva provides
   a. the least oral cavity protection  
   b. significant levels of watery saliva  
   c. the most oral cavity protection **Correct**  
   d. most help during mastication  
   e. none of the above.

47. Minor and submandibular salivary glands are important in the production of what?
   a. unstimulated, watery saliva  
   b. unstimulated, viscous saliva **Correct**  
   c. parotid fluid  
   d. GCF  
   e. none of the above

48. Radiation induced xerostomia or salivary dysfunction is dependent on what?
   a. dose of radiation  
   b. radiation field  
   c. age of patient  
   d. a and b **Correct**  
   e. none of the above.

49. A patient comes to you with complaints of dry mouth. The patient is not on any medications. What would you do first?
   a. prescribe antihistamine  
   b. suggest that he use chewing sugarless gum, candies, mints  
   c. suggest salivary gland surgery  
   d. evaluate the basis of his complaint **Correct**  
   e. none of the above

50. Xerostomia
   a. is most the prevalent side effect of drugs  
   b. may be a result of taking just one of the medications that may have xerostomia as a side effect  
   c. may be observed in patients who had radiation of the head and neck  
   d. all of the above **Correct**  
   e. none of the above