

Study Guide for chapter 14

Innate Immune System

- 1) Lysozyme type enzymes have bactericidal properties. These enzymes are most effective against gram (+) or gram (-) type bacterial and why? (3 pts)
- 2) Name the location where one can find Lysozymes in the human body? (4 pts)
- 3) Which bacteria appears to be resistant to the highly acidic properties of the human stomach? (2pts)
- 4) Describe the function of blood borne transferrin proteins (2 pts)
- 5) Describe competitive exclusion (4 pts)
- 6) Provide five opportunistic pathogens that may affect the health of a person (5 pts)
- 7) Name and describe the percentages and function of the five different types of leukocytic cells found within the human blood system (10 pts)
- 8) Which leukocytic cell exhibits the ability to leave the blood system to fight disease causing microbial agents. (4 pts)
- 9) What are cytokines and how do they function? (4pts)
- 10) Where are the group of cells called the Peyer's Patche located in the human body? (2 pts)
 - B) What is the function of the Peyer's Patch (2 pts)
- 11) List and describe seven mechanical factors that prevent bacterial invasion (21 pts)
- 12) What factors can predispose an individual to infection (4 pts)
- 13) Some macrophages are called fixed macrophages. Name and list the location of the various macrophages found in the human body (6 pts)
- 14) List and describe the five mechanism of phagocytosis (10 pts)
- 15) Describe the process of opsonization (4 pts)
 - 15 b) What are toll like receptors, where are they found and what are their function(s)? (6 pts)

- 16) Phagolysosomes take from 10 to 30 minutes to kill a bacteria. What are various methods used to kill and digest a microbe (8 pts)
- 17) How can microbes avoid phagocytosis? (6 pts)
- 18) What are the five signs and symptoms of inflammation (5 pts)
- 19) Discuss the difference between acute and chronic inflammation (6 pts)
- 21) How is vasodilation important to the inflammation process? (4 pts)
- 22) Why is there pain associated with inflammation (6 pts)
- 23) What biochemical substance may intensify the effects of histamine and kinins hormones (4 pts)
- 24) Describe diapedesis (4 pts)
- 25) What causes vasodilation? (2 pts)
- 26) What occurs during the final stage of inflammation? (2 pts)
- 27) Describe the fever response of the human body to lipopolysaccharide endotoxins. (12 pts)
- 28) Can fever be considered a defensive measure in the host (4 pt)
- 29) List and describe the side effects to fever (12 pts)
- 30) What role does C3b play in phagocytosis of a microbe (4pts)
 - 30 b) What is diapedesis? (2 pts)
- 31) Following convertase break down of complement 3 protein to C3a and C3b respectively describe the 'cascade of events that follows. (6 pts)
 - 31 b) Describe the 2 functions of C5a complement protein (4 pts)
 - 31 c) What methods do bacteria use to evade complement system activation (6 pts)
- 32) Why are Gram (-) bacteria more susceptible to complement protein cytolysis than Gram (+) bacteria? (2 pts)
- 33) How do Gram (+) cocci affect the complement system? (2 pts)
- 32) What strategy do bacteria use to avoid the complement system (4 pts)?
- 34) What are the 3 types of human interferon and their functions? (9 pts).

35) Identify at least one mechanical and one chemical factor that prevent microbes from entering the body through each of the following. (12 pts)

- A) Skin: _____
- B) eyes: _____
- C) digestive tract: _____
- D) respiratory tract: _____
- E) Urinary tract: _____
- F) Reproductive tract: _____

36) A) Fill in the table with different “white” blood types.
 B) Provide their likely percentage found in a healthy individual
 C) Briefly describe their functions. (24 pts)

A	B	C
Type	Percentage	Function
1		
2		
3		
4		
5		
6		

- D) Which “White” blood cells are categorized as polymorphonuclear leukocytes? (2 pts)
- E) What are the relative sizes of the leukocytes (3 pts)