The Immune System: Humoral Immunity

- Antibodies can be found on the plasma membrane of ______ (where they act as antigen 1. receptors) or free in the extracellular fluid, here they are known as _____ 2. Antibodies consist of four polypeptide chains made from:: • Two identical ______ chains—located on the inside of the Y-shaped molecule • Two identical chains—located on the outside of the Y-shaped molecule The chains are held together by _____ bonds. Each chain has a ______ region which is unique for each antigen and a ______ region 3. which is the same for each antibody in a given class of antibodies. Each arm of the Y-shaped antibody has identical ______ sites. The shape of these sites 4. must match the shape of the - on the antigen in order to bind. 5. Name the five classes of antibodies, each with a distinct type of stem: • _____ • • •_____ • Complete the list of four contributions of IgG antibodies: 6. • Constitutes the ______ of circulating antibodies • Formed in the late ______ and throughout the ______ immune response • Provides ______ to the fetus • Can be transferred from one individual to another (example of ______ immunity) 7. Match the characteristics listed below to the correct antibody. Choose either IgM or IgA. • These antibodies are found in secretions of tears, sweat, and saliva
 - First antibodies secreted in response to a new antigen

	• Retained as monomers on the surface of B cells				
	• Found in the mucosa of the gastrointestinal tract				
	• Found in breast milk				
	• Secreted as pentomers				
8.	In modern, industrialized countries, the most common function of IgE is its role in				
	responses. When exposed to an such as pollen, the body makes IgE antibodies.				
9.	The first exposure to an antigen is called As a result, IgE antibodies are				
	present on and During the second exposure, the allergen				
	causes the release of and other inflammatory mediators.				
10.	As a result of the actions of the chemical released in question 9, the affected person gets a runny nose				
	(due to) and has difficulty breathing (due to				
).				
11.	are drugs that bind and block histamine receptors, thus alleviating the allergy				
	symptoms.				
12.	Allergic reactions to peanuts can be very serious, causing a systemic allergic reaction known as				
13.	The two major roles of IgE are:				
	• fighting				
	•				
14.	IgD antibodies are located on the surface of cells and act as an antigen receptor. They				
	participate in activating the cell.				
15.	There are four general ways that antibodies work (to remember: PLAN). Fill in the following:				
	• P—act as opsonins to destroy pathogens by				
	• L—initiate complement activation resulting in of the pathogen				
	• A—cause, the clumping of molecules, which enhances phagocytosis				
	• N—cause, which prevents toxins and viruses from interacting with body cells				

16. Humoral immunity can be acquired either actively or passively. Define each and give an example of the naturally and artificially acquired forms.

Active Immunity:

- Naturally acquired:
- Artificially acquired:

Passive Immunity:

- Naturally acquired:
- Artificially acquired:
- 17. Determine if the following examples illustrate active or passive immunity and if the example is naturally or artificially acquired. Place an X in the appropriate column.

	Active immunity	Active immunity	Passive immunity	Passive immunity
	Naturally acquired	Artificially	Naturally acquired	Artificially
		acquired		acquired
Antivenom for				
poisonous snake				
bites				
Bacterial infection				
Immunizations				
Gamma globulins				
Breastfeeding				
Viral infection				