1. All of the following describe adaptive immune responses EXCEPT:

A. we are born with them
B. they are specific
C. they can be reactivated
D. they are systemic

2. The process by which a cell engulfs a foreign particle is known as:

A. hydrolysis
B. endosymbiosis
C. phagocytosis
D. membrane synthesis

3. Which of the following statements most-accurately describes the purpose that the immune system serves in animals?

A. all of these answers
B. to differentiate self from non-self and protect the body from pathogens
C. to maintain the skin and, thus, immunity from puncture wounds
to regulate hormones that are involved in hunger and sleep

Although interferons have several effects, they are particularly useful against infections of which type of pathogen?

- A) fungi
- B) bacteria
- C) helminths
- D) viruses

Which of the following statements correctly describes pathogen recognition in the innate immune response?

- A) Cytokines on neutrophils recognize MHC I on pathogens.
- B) Pollen on basophils and mast cells recognize interleukins on pathogens.
- C) Lysosomes on eosinophils recognize histamines on pathogens.
- D) PRRs on macrophages and dendritic cells recognize PAMPS on pathogens.

Signs and symptoms of inflammation include all of the following EXCEPT:
Which of the following is a nonspecific barrier defense?

A. macrophages
B. antibodies
C. complement
D. mucous membranes

Which of the following statements best describes the role of natural killer cells in the innate immune response?

A. all of these answers
B. to kill T-cells that recognize naturally occurring "self" epitopes
C. to kill living pathogens that have invaded the body
D. to recognize cells presenting abnormal MHC I molecules and kill them
9 The complement system is complementary to:

A the chemical barriers within the body.

B the antibody response in the adaptive immune system.

C the physical barriers outside of the body.

D the antibody response in the innate immune system.

10 Which of the following phagocytose cellular debris and pathogens?

A mast cells

B eosinophils

C natural killer cells

D macrophages

11 Which of the following presents antigens, on MHC Class II molecules, to T cells?

A natural killer cells

B mast cells

C eosinophils
Which of the following stimulate a response by B cells and T cells?

A. plasma
B. platelets
C. antigens
D. antibodies

Which of the following statements applies to the role of memory cells?

A. they cannot be reactivated
B. they are responsible for passive immunity
C. they produce cyclosporine
D. they provide an accelerated immune response upon re-exposure

What is the process by which T and B lymphocytes that recognize self antigens are deleted before they develop into fully immunocompetent cells?

A. lymphocyte stimulation
15. Which transport mechanism can bring whole cells into a cell?

A. pinocytosis
B. phagocytosis
C. facilitated transport
D. primary active transport

16. Which of the following is both a phagocyte and an antigen-presenting cell?

A. NK cell
B. macrophage
C. neutrophil
D. eosinophil

17. Which of the following presents antigen to T cells?
Which of the following statements best describes the difference between T cell receptors (TCRs) and B cell receptors (BCRs)?

A. TCRs are present on the inside of cells, whereas BCRs are present on the outside of cells.

B. TCRs contain antibodies, whereas BCRs contain do not.

C. TCRs recognize several antigen/MHC combinations, whereas BCRs only recognize one specific antigen.

D. TCRs help initiate the complement cascade, whereas BCRs help recruit phagocytes.

Which of the following cells related to the immune system are housed in the lymphatic system?

A. B and T cells

B. epithelial cells

C. red blood cells

D. glial cells
Which of the following statements accurately summarizes the humoral immune response?

A. antibodies on B cells recognize antigens in the bodily fluids and B cells proliferate

B. NK cells recognize deficiencies in MHC I and release cytokines to recruit complement

C. dendritic cells are invaded by pathogens and become APCs

D. TC cells recognize pathogen antibodies presented on MHC I molecules and induce apoptosis

Which of the following statements most accurately summarizes the major features of the cell-mediated immune response? Choose the best answer.

A. Cytotoxic T cells recognize antigens on MHC I molecules and induce apoptosis.

B. NK cells recognize malformed MHC I complexes and initiate the complement cascade.

C. Macrophages engulf pathogens and present their antigens on MHC II molecules.

D. Antibodies on B cells recognize antigens on pathogens and secrete more antibodies.

Which of the following is most active in presenting harmless antigens to the immune system to induce immune tolerance?

A. lymph nodes
While of the following statements correctly describes what happens to B or T cells that are never re-exposed to the antigen that helped create them.

- **A** they eventually revert back to naive cells able to recognize different antigens
- **B** they decrease in number but never completely die off
- **C** they gradually die off, never functioning as effector cells
- **D** they transform into red blood cells

When a B cell encounters the antigen to which it is targeted it rapidly divides and produces:

- **A** T cells
- **B** plasma cells
- **C** antigens
- **D** interferons
The part of the antigen recognized by the immune system is called the:

A epitope
B paratope
C protein
D antigen

Which subclass of antibodies are found in secretions such as milk and tears?

A IgAs
B both IgDs and IgEs
C IgGs
D IgMs

Which of the following statements accurately describes the process of neutralization of pathogens by antibodies?

A Antibodies target pathogens for filtering in the spleen, then elimination in urine or feces.
B Antibodies block extracellular proteins that pathogens use to enter host cells.
C Antibodies opsonize pathogens by inducing the complement cascade to act on them.
Antibodies mark pathogens for destruction by phagocytic cells.

The structure of an antibody is similar to the extracellular component of which receptor?

- MHC Is
- BCRs
- none of these choices
- MHC IIs

Match each term with the correct definition: 1. Affinity; 2. Avidity; 3. Cross reactivity.

A. The strength of the binding between an entire immunoglobulin, containing multiple antibodies, and one or more antigens on a pathogen.
B. The propensity for antibodies to react with antigens other than the one which originally caused them to proliferate.
C. The strength of the binding between a single antibody and a single antigen.

1. A.; 2. C.; 3. B.
1. C.; 2. A.; 3. B.
1. A.; 2. B.; 3. C.
1. B.; 2. A.; 3. C.
Which of the following problems is associated with immunodeficiency?

A. inability of hair follicles to grow properly
B. inability of red blood cells to properly circulate
C. inability of the blood-brain barrier to properly control osmotic pressure
D. inability of the immune system to combat infections

Anaphylactic shock is a result of which immune system disorder?

A. allergies
B. immunodeficiency
C. autoimmunity
D. all of these answers