

## HST.035 Homework Assignment #2

(Answer Sheet)

1. For each of the descriptions on the left, write the corresponding letter from the list of terms on the right:

### Descriptions

  G   Deposition of calcium salts in dead or dying tissue.

  D   Is mediated by activation of caspases.

  B   Increase in the size of cells/tissues.

  I   Replacement of one cell type with another.

  A   Decrease in the size of cells/tissues.

  F   Deposition of calcium salts in normal tissues.

  H   Responsible for lipid peroxidation & DNA damage.

  C   Adaptive increase in the number of cells.

  E   Results in random and diffuse DNA breakdown.

### Terms

A. Atrophy

B. Hypertrophy

C. Hyperplasia

D. Apoptosis

E. (Coagulative) necrosis

F. Metastatic calcification

G. Dystrophic calcification

H. Free radicals

I. Metaplasia

2. Indicate which of the following statement about acute inflammation are True:

Statement	True or False
Rolling of leukocytes on endothelial cells is mediated by selectins	True
Leukocyte adhesion to endothelial cells is mediated by cadherins	False
Components of the complement system can act as chemotactic agents	True
Margination of leukocytes is mediated by integrins	False
Deficiency of myeloperoxidase (MPO) results in a defect in bacterial internalization into neutrophils	False
Defensins, lysozyme and major basic protein are examples of oxygen-independent antimicrobial agents	True
Swelling at the site of acute inflammation is the result of leukocyte transmigration into the interstitial tissues	False
Direct endothelial injury results in a rapid and short-lived increase in vascular permeability (so-called immediate transient response)	False
Patients with NADPH oxidase deficiency are highly susceptible to viral infections	False

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3. Activated complement products can (circle ALL that apply):

- A. Generate pores in cell membranes
- B. Enhance antigenic response to infections
- C. Recruit and activate inflammatory cells
- D. Opsonize microbes

4. A 5-year-old child presents with a history of recurrent bacterial infections. During each infection, there is an appropriate increase in his total white cell count (including neutrophils), but his biopsies generally show very few neutrophils at the sites of infection. A defect or deficiency in which of the following can result in this clinical scenario? (Circle ALL that apply.)

- A. Selectins
- B. NADPH oxidase
- C. Myeloperoxidase
- D. Integrins

5. Which of the following statements are true about immediate hypersensitivity reaction (circle ALL that apply):

- A. Is mediated by immunoglobulin E (IgE)
- B. Can result in hives/rash because of vasodilation and increased vascular permeability
- C. Can result in wheezing because of bronchoconstriction in the lungs
- D. Is mediated by Fc-specific activation of neutrophils

6. Indicate which of the following statement about cell-mediated immunity are True:

Statement	True or False
T cell mediated cytotoxicity results in extensive "bystander" injury	False
Immediate hypersensitivity is responsible for clearance of intracellular infections such as tuberculosis	False
Cell-mediated immune damage is responsible for tissue damage in viral infections such as hepatitis B	True
Delayed-type hypersensitivity is a cytokine-mediated reaction initiated by helper T cells	True
Delayed-type hypersensitivity results in a highly specific immune response to infected cells	False
Granulomatous inflammation is a variant of delayed-type hypersensitivity	True