

EXAM 3 REVIEW

Exam 3 information

- This examination covers content learned in weeks 5, 6 and 7. (course outcomes 9 and 10)
- This exam is worth 180 total points, and includes the following types of questions:
 - 30 Multiple choice questions
 - 1 Matching Question
 - 3 Multiple-answer questions
 - 4 Fill-in-the-blank question
 - 1 Short answer question
 - 3 Essay questions
- You have 120 minutes to complete the Exam.

Reviewing your edapt assignments, discussion posts, and class assignments is a great way to prepare for the exam! Additionally, you can watch the Exam 3 review recording in [Academic Support](#).

Course outcome 9: Analyze the three lines of defense that protect the human body from pathogens.

1. Summarize the major components of host defenses
 - a. Innate, nonspecific
 - i. First line of defense (physical, microbiota, and chemical barriers)
 - ii. Second line of defense (phagocytosis, inflammation, fever, and antimicrobial products)
 - b. Acquired, specific
 - i. The third line of defense (B cells and T cells)
2. Describe the appearance and functions of the white blood cells: granulocytes (neutrophils, eosinophils, basophils) and agranulocytes (monocytes and lymphocytes)
3. Describe the phases of phagocytosis
4. Describe the antiviral activity of interferons
5. Describe the complement system

Acquired/Adaptive/Specific immunity, The third line of defense

1. Describe the characteristics of specific immunity, including specificity, diversity, inducibility, clonality, tolerance, and memory.
2. Define the terms antigen, epitope, and hapten
3. Describe the events of T cell (cell-mediated immunity) development, activation, and function.
 - a. Origin in red bone marrow
 - b. Maturation in the thymus
 - c. Antigen-presenting cells present antigen to helper T cells (CD4 cells) and cytotoxic T cells (CD8 cells).
 - d. Activated helper T cells
 - i. Activate cytotoxic T cells (CD8 cells)
 - ii. Activate B cells
 - iii. Creates memory helper T cells
 - e. The activated cytotoxic T cells
 - i. Create memory cytotoxic T cells