C. White Blood Cells

Color cellular components as indicated (Wright's stain colors). Label cell type.

1. neutrophil
   - ○ nucleus (blue or blue-purple)
   - ○ granules (pink or light lilac)
2. eosinophil
   - ○ nucleus (light blue-purple)
   - ○ granules (red)
3. basophil
   - ○ nucleus (light blue-purple)
   - ○ granules (dark blue)
4. monocyte
   - ○ nucleus (blue-violet)
   - a. macrophage
5. lymphocyte
   - ○ nucleus (blue-purple)
   - a. T cell
   - b. B cell
   - c. natural killer (NK) cell

Color and label:

6. ○ colony stimulating factors
7. ○ bone (marrow)
8. ○ thymus
9. ○ secondary lymphatic tissue (lymph nodes, spleen, etc.)
10. ○ foreign antigen

Label the T cells:

11. CD8
12. CD4
13. T_C (cytotoxic or killer)
14. T_S (suppressor)
15. T_H (helper)
16. T_D (mediate delayed-type hypersensitivity)

Label the B cell:

17. plasma

Exercise 11.3:

_____ 1. Which cells are granulocytes (contain granules)?

_____ 2. Which cells are agranulocytes (lack granules)?

_____ 3. Granulocytes and monocytes are produced by the bone marrow when stimulated by _____ .

_____ 4. The lymphocytes that form in the bone marrow are _____ , _____ , and _____ . Name the lymphocytes that:

_____ a. complete their development in the thymus.

_____ b. are genetically programmed for a specific immune reaction after exposure to a foreign antigen.

_____ c. function without previous exposure to foreign antigen.

_____ 5. T cells develop into _____ (number) functionally different cells. These cells look _____ (the same, different).

6. Complete the table below.

Cell Type	Description	Function
a.	multilobed nucleus, granules stain pale pink	phagocytic, acute response to infection
b.	bilobed nucleus, granules stain red	attack parasites, involved in allergic reactions
c.	lobed nucleus, granules stain blue	release histamines and heparin, inflammatory response, involved in allergic reaction
d.	largest white blood cells	phagocytic, become tissue macrophage and attack bacteria, make monokines (chemical messengers)
e.	large nucleus, little cytoplasm	provide *specific* immune response, make lymphokines (chemical messengers)
f.	large lymphocyte, slightly indented nucleus	recognize and destroy tumor cells and viral infected cells