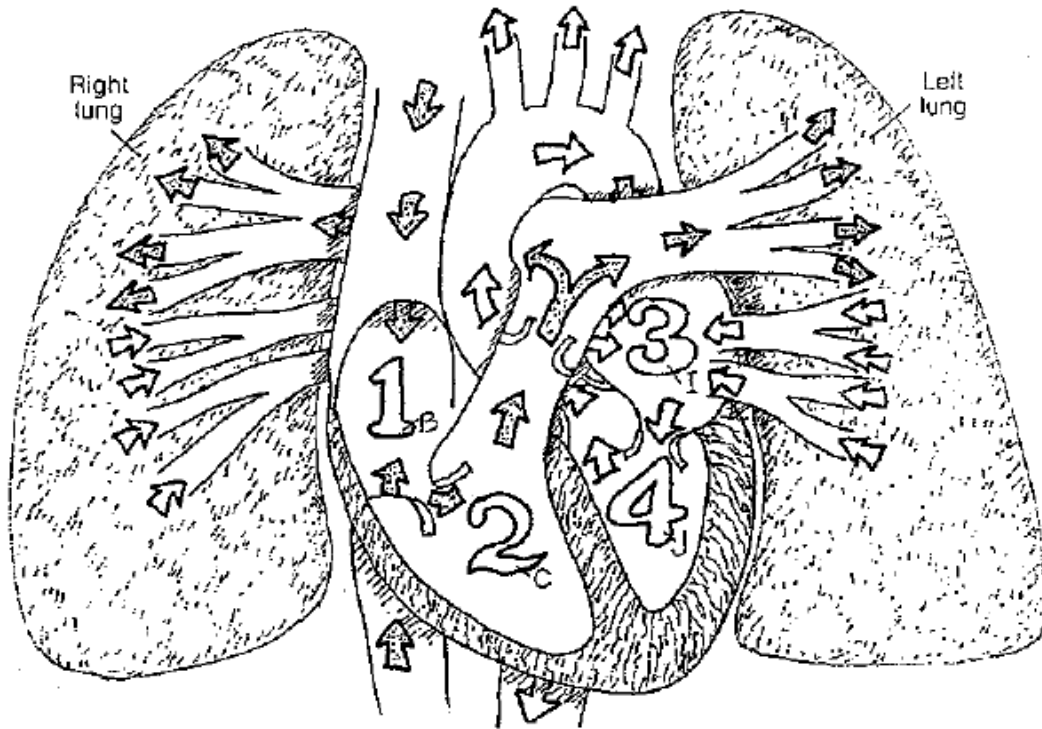


CIRCULATION THROUGH THE HEART

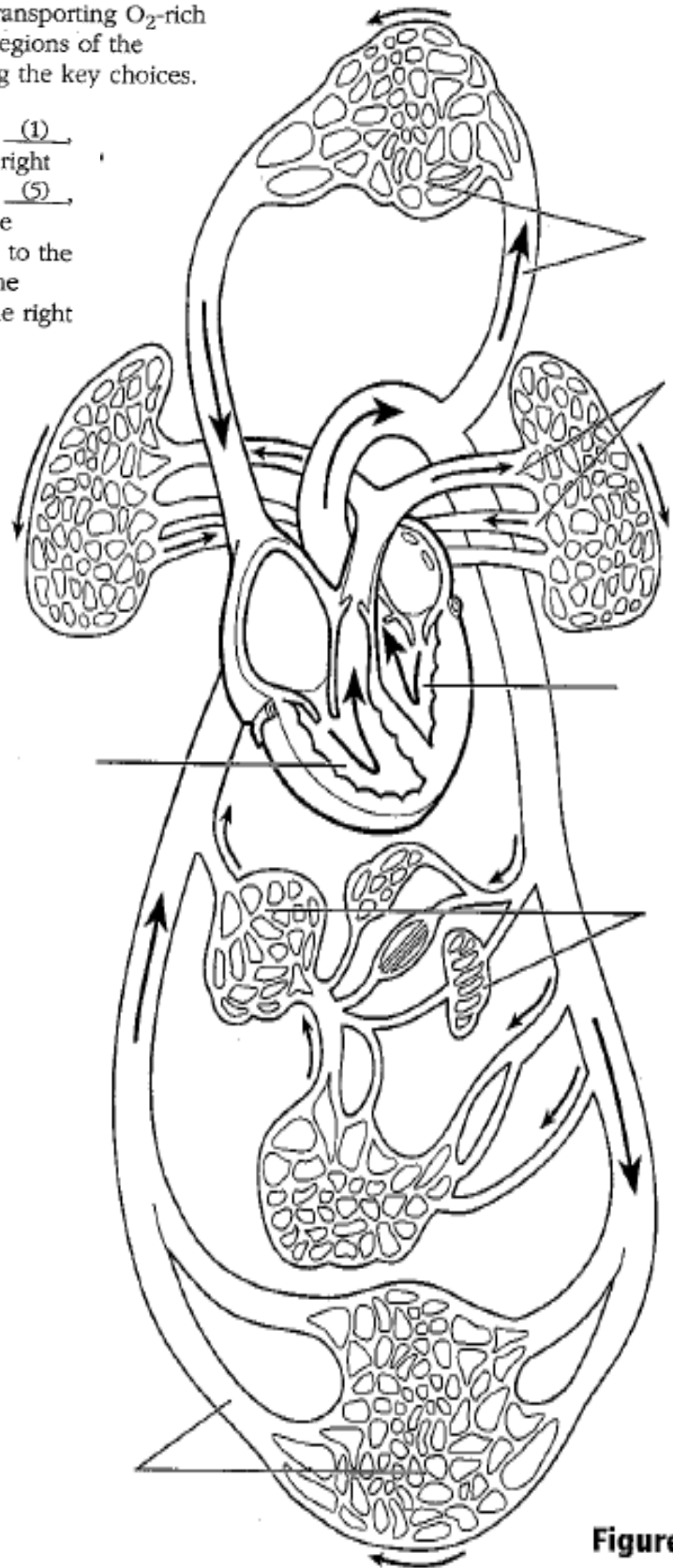
OXYGEN-RICH BLOOD  $H^+$  →  
 OXYGEN-POOR BLOOD  $A^+$  →



The heart is called a double pump because it serves two circulations. Trace the flow of blood through both the pulmonary and systemic circulations by writing the missing terms in the answer blanks. Then, color regions transporting  $O_2$ -poor blood blue and regions transporting  $O_2$ -rich blood red on Figure 11-1. Finally, identify the various regions of the circulation shown in Figure 11-1 by labeling them using the key choices.

From the right atrium through the tricuspid valve to the (1), through the (2) valve to the pulmonary trunk to the right and left (3), to the capillary beds of the (4), to the (5), to the (6) of the heart through the (7) valve, to the (8) through the (9) semilunar valve, to the (10), to the systemic arteries, to the (11) of the body tissues, to the systemic veins, to the (12) and (13), which enter the right atrium of the heart.

- \_\_\_\_\_ 1.
- \_\_\_\_\_ 2.
- \_\_\_\_\_ 3.
- \_\_\_\_\_ 4.
- \_\_\_\_\_ 5.
- \_\_\_\_\_ 6.
- \_\_\_\_\_ 7.
- \_\_\_\_\_ 8.
- \_\_\_\_\_ 9.
- \_\_\_\_\_ 10.
- \_\_\_\_\_ 11.
- \_\_\_\_\_ 12.
- \_\_\_\_\_ 13.



**Figure 11-1**

The events of one complete heartbeat are referred to as the cardiac cycle. Complete the following statements that describe these events. Insert your answers in the answer blanks.

- \_\_\_\_\_ 1. The contraction of the ventricles is referred to as (1), and the period of ventricular relaxation is called (2). The monosyllables describing heart sounds during the cardiac cycle are (3). The first heart sound is a result of closure of the (4) valves; closure of the (5) valves causes the second heart sound. The heart chambers that have just been filled when you hear the first heart sound are the (6), and the chambers that have just emptied are the (7). Immediately after the second heart sound, the (8) are filling with blood, and the (9) are empty. Abnormal heart sounds, or (10), usually indicate valve problems.
- \_\_\_\_\_ 7. \_\_\_\_\_ 9.
- \_\_\_\_\_ 8. \_\_\_\_\_ 10.