Chapter 18 Review

18.1  *Anatomy of the heart*

The heart has four chambers and pumps blood through the pulmonary and   
systemic circuits

* Name the coverings of the heart.
* Describe the structure and function of each of the three layers of the heart wall.
* Describe the structure and functions of the four heart chambers. Name each chamber and provide the name and general route of its associated great vessel(s).

18.2  *Why does the heart have valves?*

Heart valves make blood flow in one direction

* Name the heart valves and describe their location, function, and mechanism of operation.

18.3 *What path does blood take through the heart?*

Blood flows from atrium to ventricle, and then to either the lungs or the rest   
of the body

* Trace the pathway of blood through the heart.
* Name the major branches and describe the distribution of blood flow in coronary circulation..

18.4  *How do cardiac muscle fibers differ from skeletal muscle fibers?*

Intercalated discs connect cardiac muscle fibers into a functional syncytium

* Describe the structural and functional properties of cardiac muscle, and explain how   
  it differs from skeletal muscle.
  + Structure, presence of gap junctions, contraction, pacemaker cells present

18.5  *Electrical events*

Pacemaker cells trigger action potentials throughout the heart

• Describe and compare action potentials in cardiac pacemaker and contractile (ie. Muscle) cells.

• Name the components of the conduction system of the heart, and trace the conduction pathway.

• Draw a diagram of a normal electrocardiogram tracing.

• Name the individual waves and intervals, and indicate what each represents. Name some abnormalities that can be detected on an ECG tracing.

18.6  *Mechanical events*

The cardiac cycle describes the mechanical events associated with blood flow through the heart

• Describe the timing and events of the cardiac cycle.

18.7  *How is pumping regulated?*

Stroke volume and heart rate are regulated to alter cardiac output

• Name and explain the effects of the factors regulating stroke volume and heart rate.

* + EDV & ESV
  + Preload, Contractility, & Afterload in stroke volume
  + Norephinephrine, calcium ion concentrations, vagal tone, & atrial reflex in heart rate

Developmental Aspects of the Heart

* What do the sinus venosus, atrium, ventricle, & bulbus cordis give rise to?