Biology 202: The Heart & Cardiovascular System

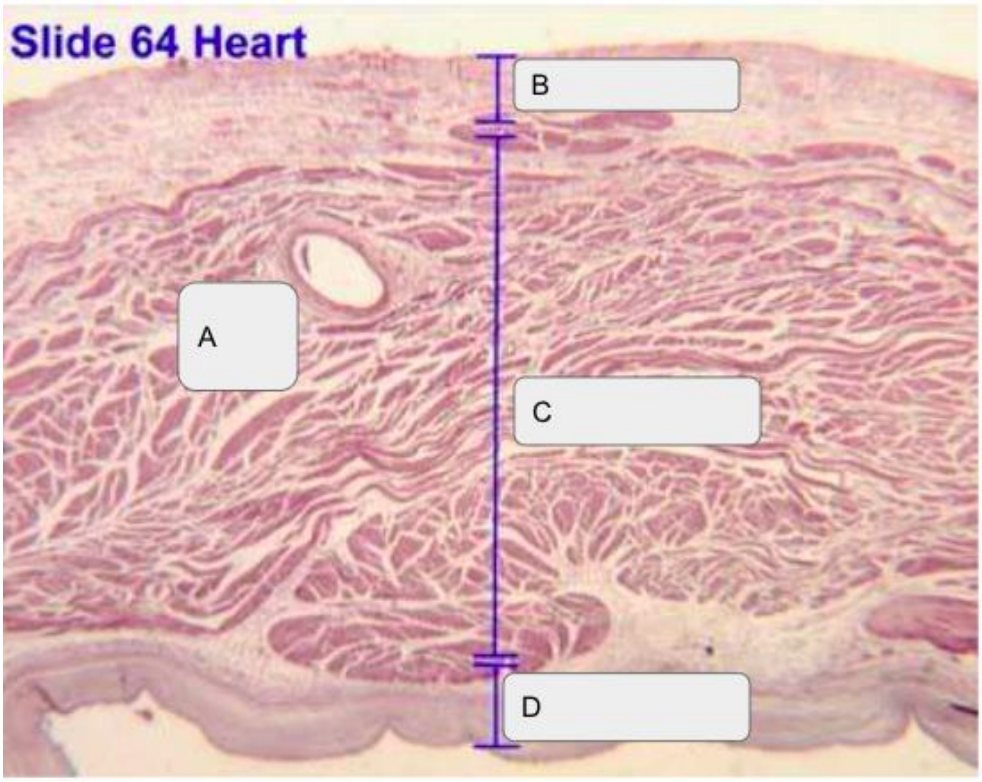
1) Match the structures and layers of the heart.

A: _____ C: _____

B: _____ D: _____

Word Bank:

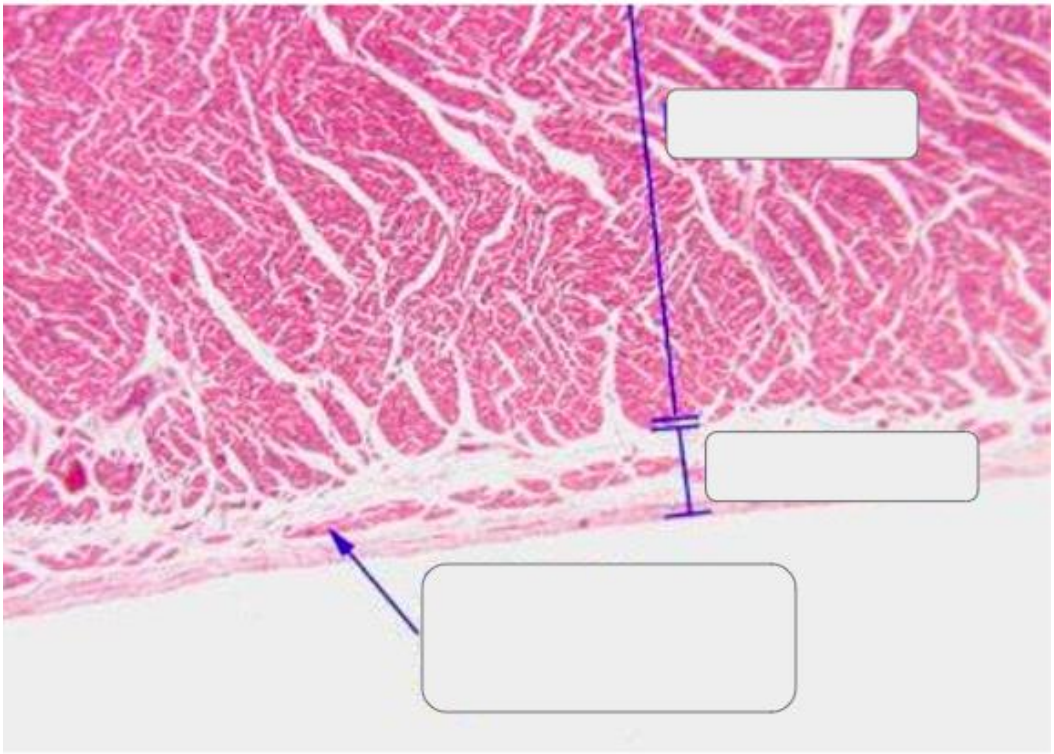
Myocardium
Endocardium
Atrial Wall
Epicardium



Source Lesson: The Heart: Location, Layers & Chambers

2) Label the layers and structures of the heart.

Purkinje fibers in subendocardial layer
Endocardium
Myocardium



Source Lesson: The Heart: Location, Layers & Chambers

3) Match the chambers and structures of the heart.

A: _____ E: _____

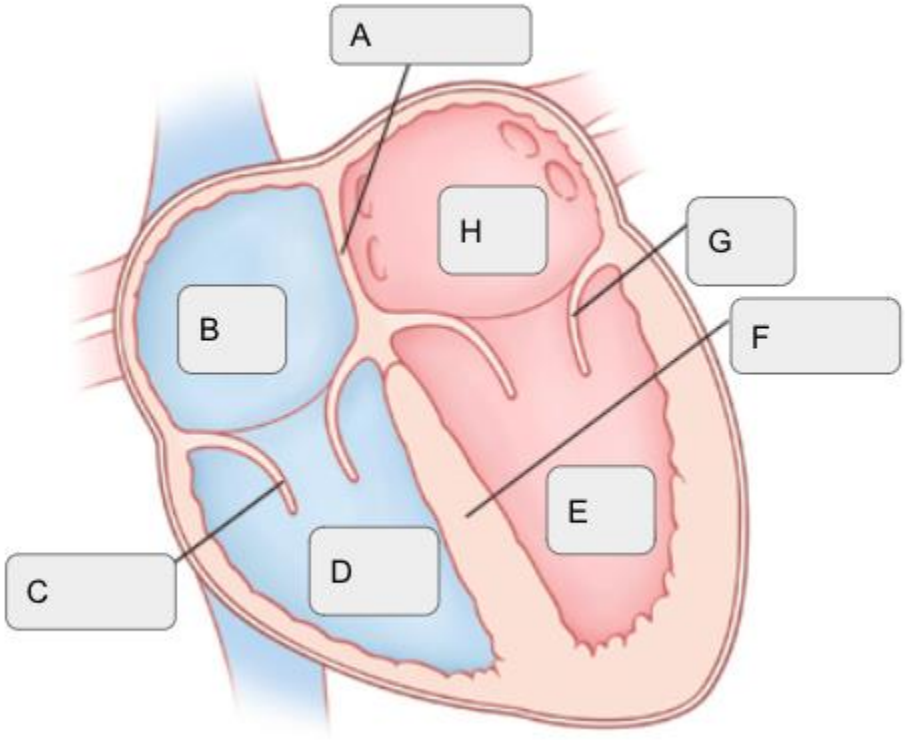
B: _____ F: _____

C: _____ G: _____

D: _____ H: _____

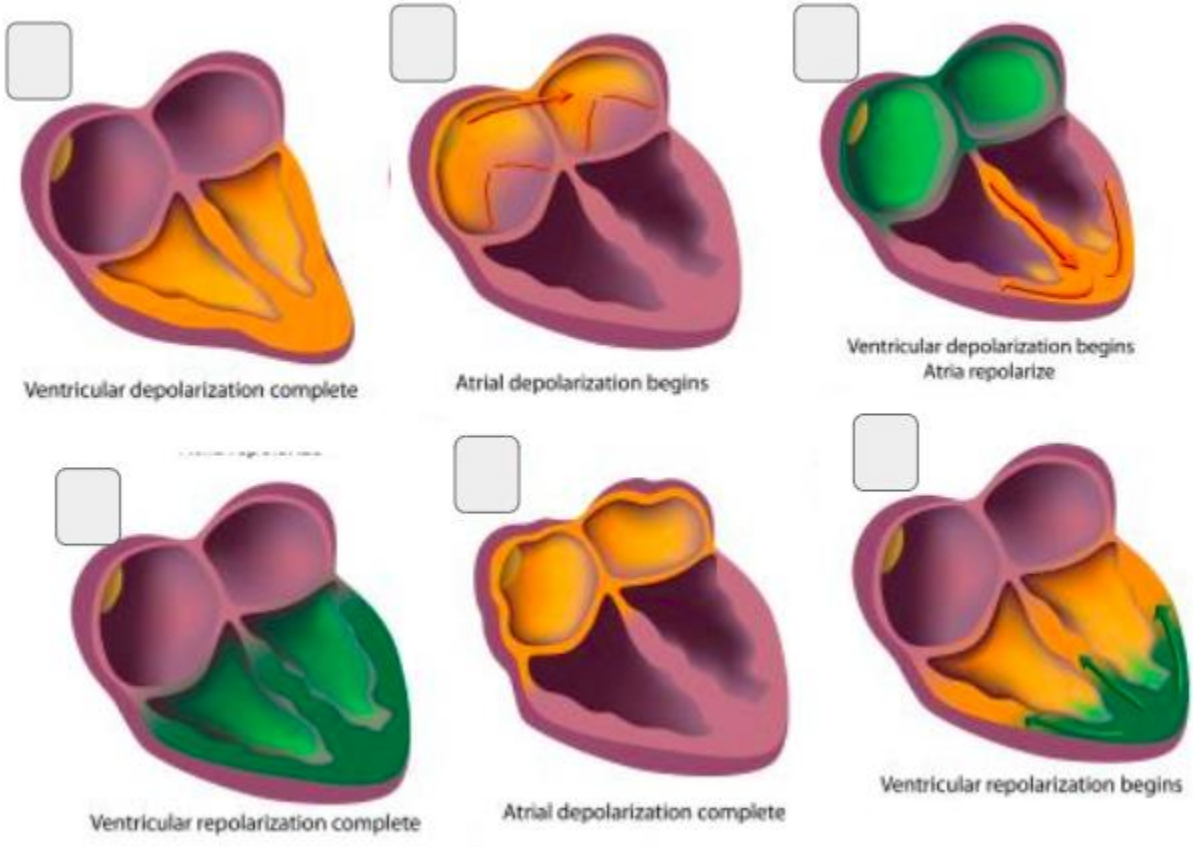
Word Bank:

Right atrium	Atrial septum
Mitral valve	Left atrium
Tricuspid valve	Left ventricle
Ventricular septum	Right ventricle



Source Lesson: The Heart: Location, Layers & Chambers

4) The images below show the different waves of a typical ECG during normal sinus rhythm. Label the images in correct order, from 1 - 6.



Source Lesson: Cardiac Muscle: Contraction Process, Ion Channels & Cardiomyocytes

5) Study the image of the heart below. Label the structures of the heart (gray boxes) using the terms from Word Bank. Then, label the sequence of electrical conduction (light blue boxes).

Word Bank:

Left ventricle	Superior vena cava
Right atrium	Purkinje fibers
Interventricular septum	Internodal pathway
Left atrium	Right ventricle

Sequence of Electrical Conduction:

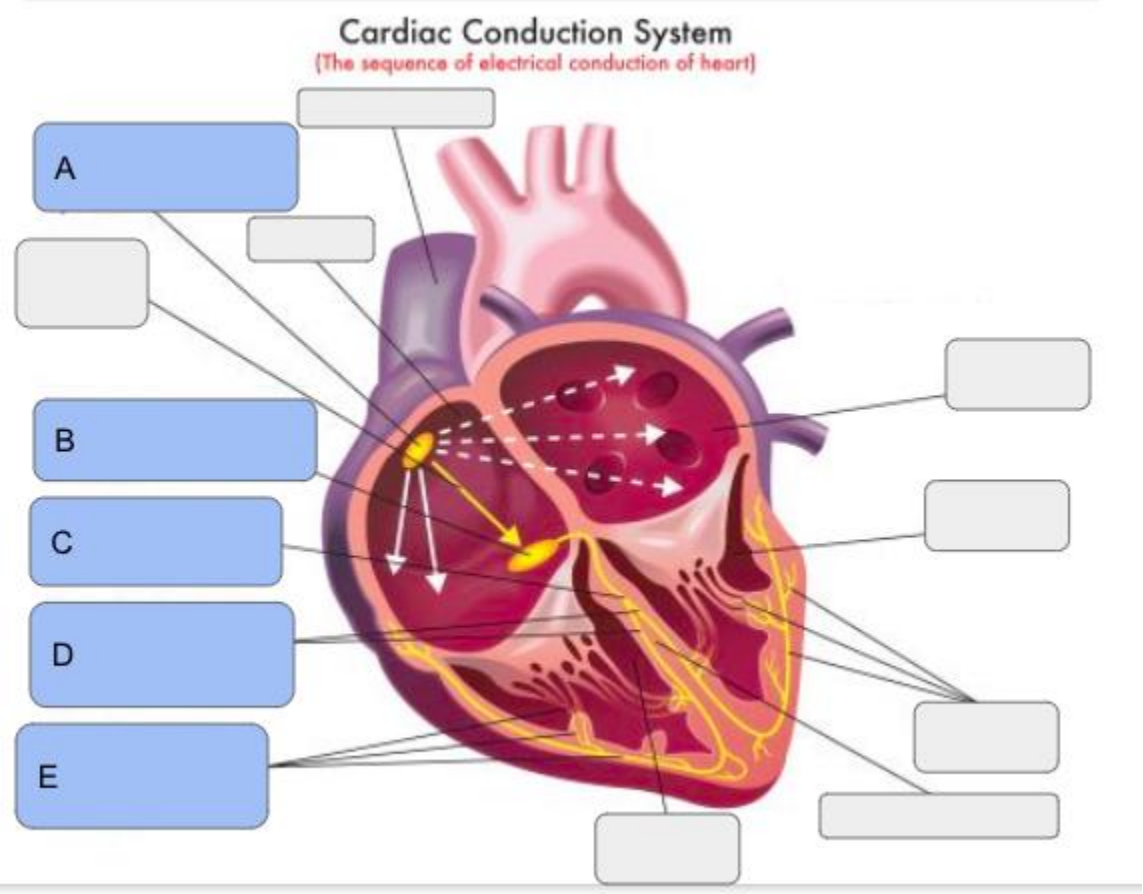
_____ The atrioventricular bundle connects the atria to the ventricles.

_____ The Purkinje fibers depolarize the contractile cells of both ventricles.

_____ The sinoatrial node generates impulses.

_____ The bundle branches conduct the impulses through the interventricular septum.

_____ The impulses pause at the atrioventricular node.



Source Lesson: Electrical Pathway through the Heart: Initiation & Action Potential Timing

6) Fill in the table below with the correct chamber of the heart.

Left ventricle Left atrium

Right ventricle Right atrium

Heart Chamber	Function
1)	Receives deoxygenated blood from the body and empties it into the right ventricle
2)	Receives blood low in oxygen from the right atrium and pumps it to the lungs
3)	Receives blood that is rich in oxygen from the lungs and empties it into the left ventricle
4)	Receives oxygen rich blood from the left ventricle and pumps it to the tissues of the body

Source Lesson: Blood Flow within the Heart: Pathways, Chambers, Valves & Electrical Conduction

7) Fill in the table below with the correct valve.

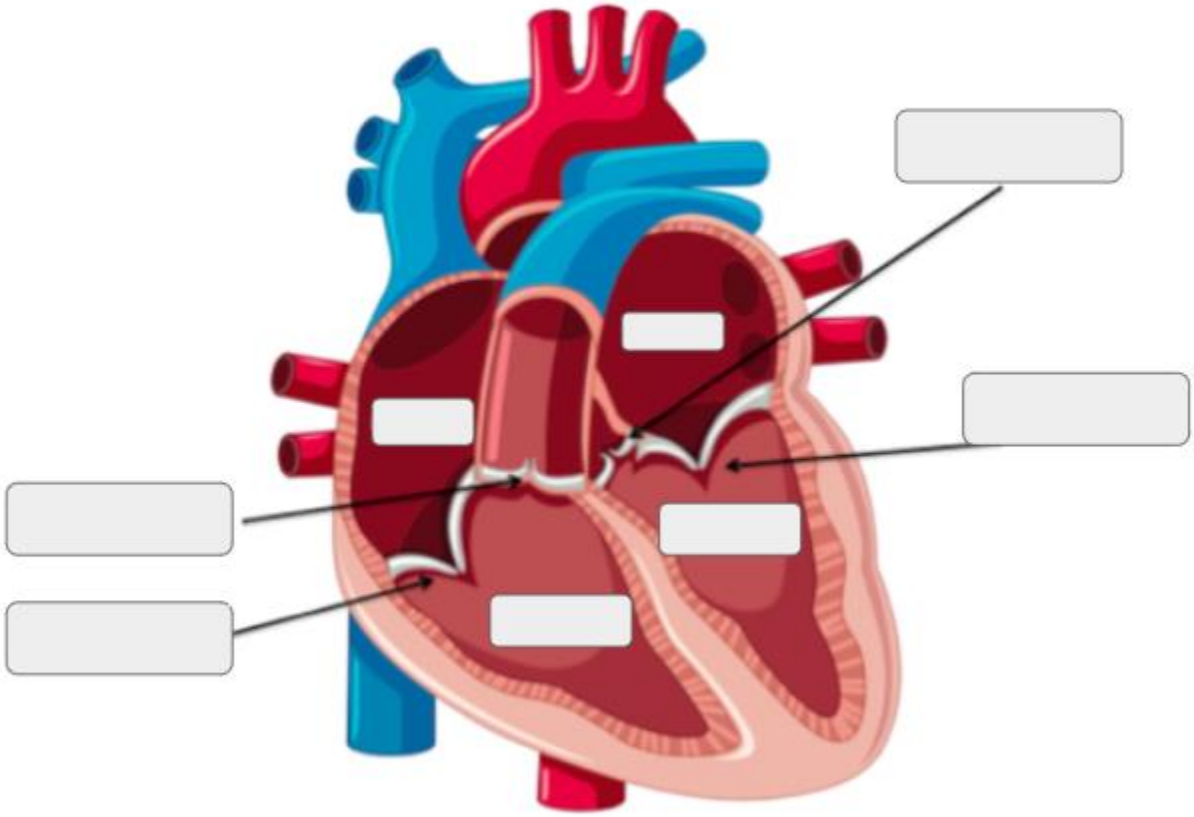
Aortic Valve Mitral Valve
Pulmonary Valve Tricuspid Valve

Valve	Location in the Heart	Direction of Blood Flow
1)	Between the left atrium and left ventricle	When open, the mitral valve allows blood to flow from the left atrium and into the left ventricle
2)	Between right ventricle and pulmonary artery	The pulmonary valve opens when the right ventricle contracts allowing blood to enter the pulmonary artery and carry it to the lungs
3)	Between the right atrium and right ventricle	When open, the tricuspid valve allows blood to flow from the right atrium and into the right ventricle
4)	Between the left ventricle and aorta	The aortic valve opens when the left ventricle contracts allowing blood to flow from the ventricle to the aorta and to the rest of the body via arteries

Source Lesson: Blood Flow within the Heart: Pathways, Chambers, Valves & Electrical Conduction

8) Label the chambers and valves of the heart in the image below.

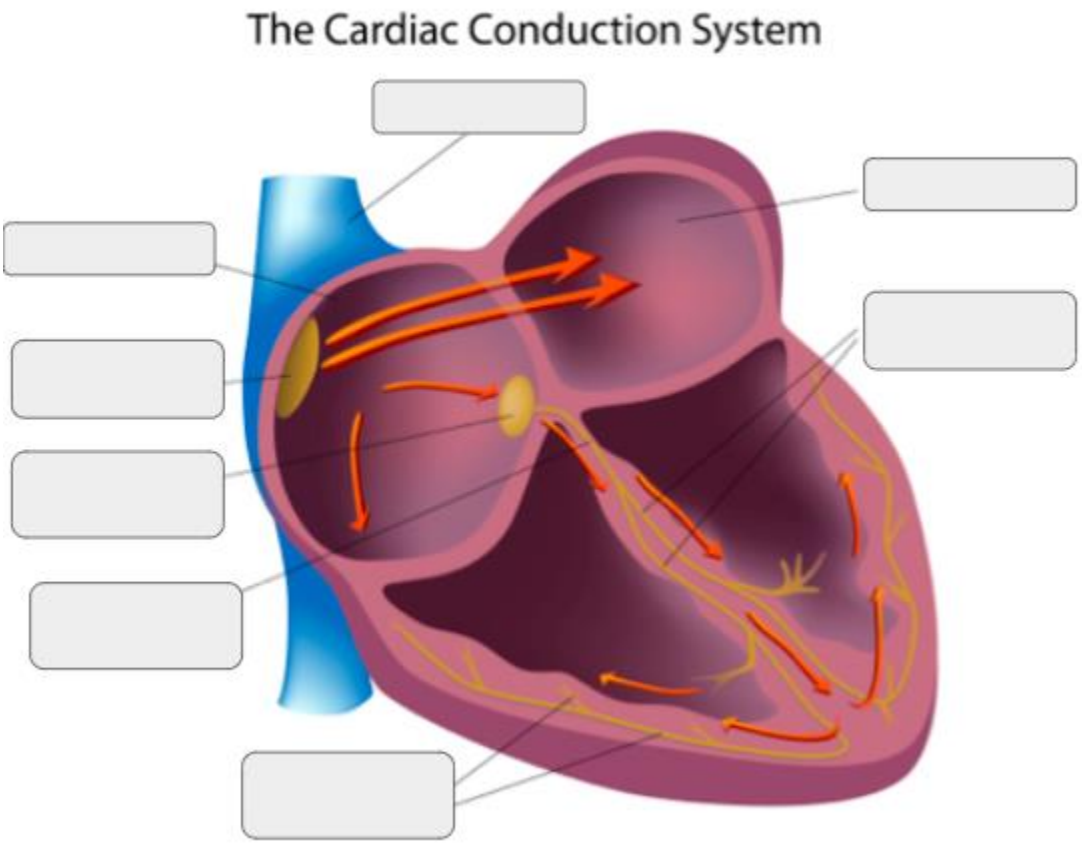
Aortic valve
Pulmonary valve
Tricuspid valve
Mitral valve
Left Atrium
Right Atrium
Right Ventricle
Left Ventricle



Source Lesson: Blood Flow within the Heart: Pathways, Chambers, Valves & Electrical Conduction

9) Label the structures of the heart in the image below.

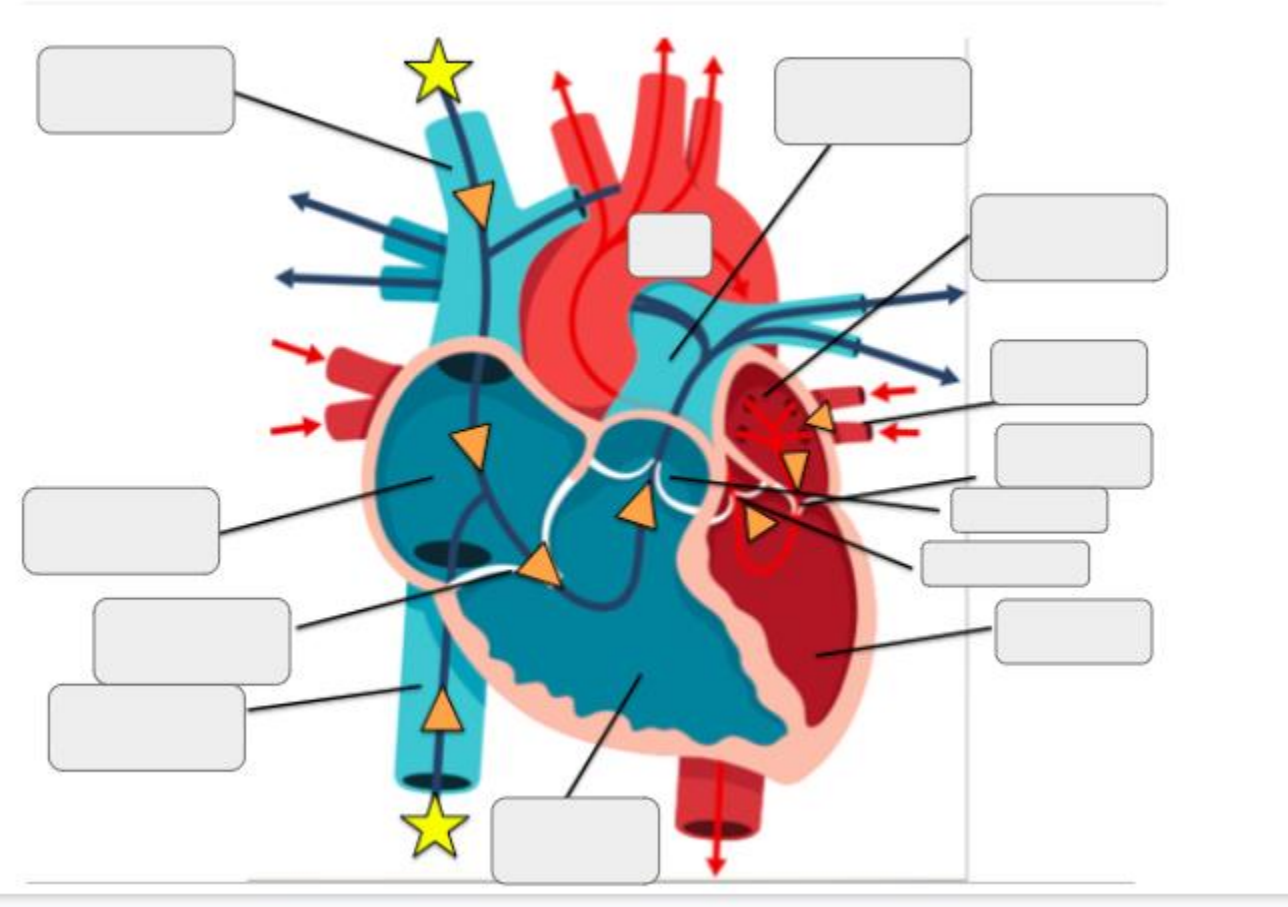
Right atrium
Left atrium
Atrioventricular node
Purkinje fibers
Superior vena cava
Sinoatrial node (pacemaker)
Bundle branches
Atrioventricular bundle



Source Lesson: Blood Flow within the Heart: Pathways, Chambers, Valves & Electrical Conduction

10) Label the structures of the heart in the image below.

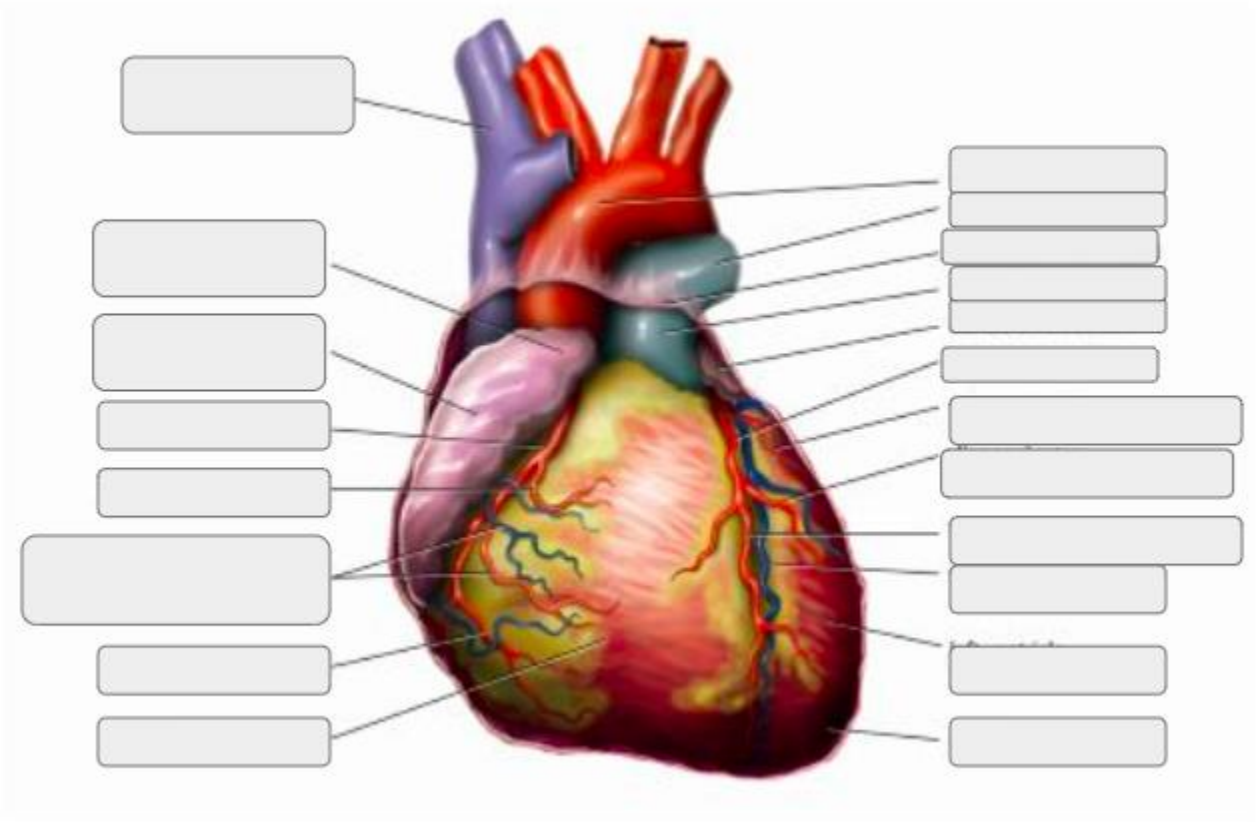
Pulmonary valve
Right atrium
Aorta
Inferior Vena cava
Left atrium
Pulmonary veins
Aortic valve
Mitral valve
Superior Vena cava
Tricuspid valve
Pulmonary artery
Right ventricle
Left ventricle
Pulmonary veins



Source Lesson: Blood Flow within the Heart: Pathways, Chambers, Valves & Electrical Conduction

11) Label the structures of the heart in the image below.

Left coronary artery
Left marginal artery
Auricle of right atrium
Diagonal artery
Auricle of left atrium
Aorta
Right coronary artery
Pericardium
Pulmonary trunk
Left ventricle
Great cardiac vein
Superior vena cava
Right ventricle
Right marginal artery
Apex
Right atrium
Left pulmonary artery
Conus arteriosus brevis
Right ventricular artery and vein
Anterior interventricular artery



Source Lesson: Coronary Circulation of the Heart

12) Fill in the table below with the heart condition associated with the description.

Condition	Description
1)	elevated resting heart rate that is greater than 100 bpm
2)	depressed resting heart rate less than 60 bpm
3)	heart beats with an irregular or abnormal rhythm
4)	very rapid, uncoordinated contractions of the atria
5)	life-threatening condition where disordered electrical activity causes the ventricles to quiver instead of contracting normally

Source Lesson: Measurements & Conditions Detected by Electrocardiograms