THE CARDIOVASCULAR SYSTEM

A. Functions

1. *aka*: (along with lymphatic system) is known as **circulatory system**

2. transportation of materials (gases, nutrients, wastes) throughout the body

3. dependent upon the heart

B. Facts

1. develops early and reaches functional state long before any other major organ

systems

2. heartbeat begins in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. the heart beats approximately 100, 000 times per day

C. Size and Location

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. size of a fist (14 cm x 9 cm)

3. lies in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ just behind \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. lower border forms \_\_\_\_\_\_\_\_\_\_\_\_ which directs slightly to the \_\_\_\_\_\_\_\_\_\_

D. **Coverings** of the Heart

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. outer sac, loosely fitting; tough fibrous tissue protects and anchors

b. known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. visceral layer (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the heart)

b. continuous with heart wall at superior margin aka: serous pericardium

E. **Wall** of the Heart

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. composed of cardiac muscle tissue

b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ join adjacent cells

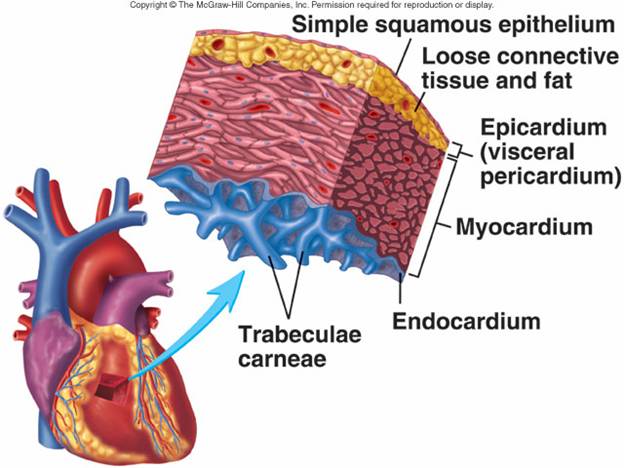
c. large areas electrically coupled into single functioning units allowing quick

conduction of action potentials for forceful rhythmic contraction

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. delicate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of interior wall

b. endothelial tissue covers branched projections (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)



F. **Chambers** of the Heart

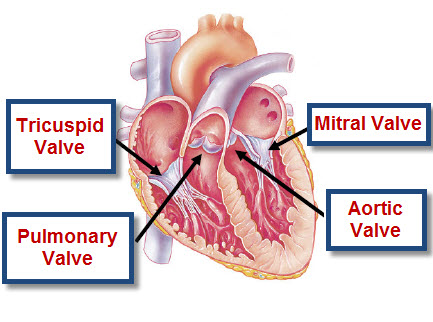
1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. \_\_\_\_\_\_\_\_\_\_\_\_ chambers

b. separated into right and left (interatrial septum)

c. receive blood from veins

d. \_\_\_\_\_\_\_\_\_\_\_\_ walls

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. \_\_\_\_\_\_\_\_\_\_\_ chambers

b. separated into left and right (interventricular septum)

c. primary pumping chambers

d. \_\_\_\_\_\_\_\_\_\_\_\_ muscle

G. **Valves** of the Heart

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Valves (AV)

a. Anchored to papillary muscles of ventricles by chordae tendinae

b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1) btw right atrium and right ventricle

2) three flaps

c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (\_\_\_\_\_\_\_\_\_\_\_\_\_)

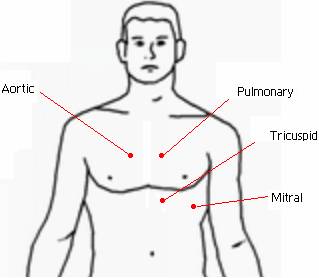
1) btw left atrium and left ventricle

2) two flaps

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Valves (SL) (resemble half-moon)

a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ : entrance of pulmonary artery

b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ : entrance of aorta

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H. **Auscultation Points 🡪**

I. **Skeleton of the Heart**

1.set of fibrous connected rings

2. semi-rigid support for heart valves &

attachment of cardiac muscle

3. electrical barrier btw myocardium of atria

and ventricles

J. **Vena Cavae** (large veins)

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: delivers blood from head, neck, upper limbs, & chest

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: delivers blood from rest of trunk, the viscera, & lower limbs

K. **Pulmonary Vessels**

**1.** Pulmonary \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. take blood to lungs for gas exchange

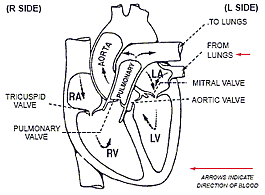
b. dark red (\_\_\_\_\_\_\_\_) due to \_\_\_\_\_\_\_\_ oxygen/high CO2

2. Pulmonary \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. take blood to heart from lungs

b. bright \_\_\_\_\_\_\_\_ due to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ content

L. **Blood Pathway**

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M. **Blood Supply of Heart**

1.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: supplies blood to muscle tissue of heart

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: supply blood to heart

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ : carry blood away from coronary capillaries to sinus

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ : deposits to right atrium

N. **Conditions**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

a. painful condition resulting from oxygen deprivation of myocardial cells

b. Cause: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_coronary artery usually

during physical activity or emotional disturbance

c. Symptoms: heavy pressure sensation, tightening or squeezing in chest

behind sternum which may radiate to jaw, throat, upper limbs; profuse

sweating, difficulty breathing

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

complete obstruction of coronary artery or one of its branches

