



IQRA NATIONAL UNIVERSITY

DEPARTMENT OF ALLIED HEALTH SCIENCES

Mid-Term Examination (Summer 2020) (BS DT 1st, BS MLT 1st, BS RAD 1st)

Course Title: Human Anatomy-I

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Time: 4 hours

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Note:

- Attempt all questions from this section, all questions carry equal marks.
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Q1. Define the following terms:

- A) Motor unit
- B) Ipsilateral
- C) Supination
- D) Axial skeleton
- E) Arteriosclerosis
- F) Shunt

Q2. Differentiate between type 1 and type 2 muscle fibers.

Q3. Classify the bones according to their shape.

Q4. What is the difference between artery, vein and capillary?

Q5. What do you know about the mechanism of skeletal muscle contraction?

Q6. What is the anatomical position of scapula and clavicle in human body?

Ans 1A)Motor unit..

A motor unit, the functional unit of muscle contraction, is a single motor nerve and the associated muscle fibers that are innervated upon stimulation from the nerve. A collection of motor units is referred to as a motor pool.

B)Ipsilateral...

On the same side, as apposed to contralateral. for example, a tumor involving the right side of the brain may affect vision ipsilateral 'that is, in the right eye.

C)... Supination....

Rotation of the forearm and hand so that the palm faces forward or upword also : a corresponding movement of the foot and leg in which the foot rolls outward with an elevated arch. 2: the position resulting from Supination.

D) Axial skeleton...

The axial skeleton includes all the bones along the body's long axis. Let's work our way down this axis to learn about these structures and the bones that form them. The axial skeleton includes the bones that form the skull, laryngeal skeleton, vertebral column, and thoracic cage.

E) Atherosclerosis...

Atherosclerosis refers to the buildup of fats, cholesterol and other substances in and on your artery walls (plaque), which can restrict blood flow. The plaque can burst, triggering a blood clot.

F) Shunt:...

1) To move a body fluid, such as cerebrospinal fluid, from one place to another. 2) A catheter (tube) that carries cerebrospinal fluid from a ventricle in the brain to another area of the body. A SHUNT may be placed to relieve pressure from hydrocephalus,...

Ans 2. Differentiate Between Type 1 And Type 2 muscle fiber...

	Type 1 muscle fibers	Type 2 muscle fibers
Definition	Type 1 muscle fibers are one type of muscle fibers that are slow contracting.	Type 2 muscle fibers are another type of muscle fibers that are rapid firing.
Glycogen content	Has a low glycogen content.	Has a moderate level of glycogen.
Contraction	slow	fast
Synonyms	Slow Twitch Muscles	fast twitch muscles
color	Red	Red and white
Respiration	uses aerobic respiration	uses anaerobic respiration
Mitochondria	Are more prevalent	Are less prevalent
Oxygen Richness	contain more oxygen within them	contain less or no oxygen within them
Resistance to fatigue	High	intermediate
occurrence	Recruited first during activity	Recruited second during activity
Function	Help to enable long endurance events such as distance running	Help powerful bursts of movements like sprinting.

Ans 3... Classification of bones.

According to their shape.

- long bones
- short bones
- flat bones
- irregular bones
- sesamoid bones
- sutural Bones

A) Sutural Bones..

Sutural bones, or wormian bones, are small, flat, oddly shaped bones found between the flat, bones of the skull. they range in size from a grain of sand to a quarter. Their borders are like pieces of a jigsaw puzzle.

B) irregular Bones..

Irregular Bones have complex shapes with short, flat notched, or ridged surface the vertebrae that form the spinal column, the bones of the pelvis, and several bones in the skull are examples of irregular bones.

c) Short bones..

short bones are boxlike in appearance Examples of short bones include the carpal bones (wrists) and tarsal bones (Ankles).

D) Flat Bones...

Flat bones have thin, parallel surface. flat bones form the roof of the skull, the sternum (breastbone). form the roof of the skull, the sternum (breastbone) the ribs and the scapulae (shoulder blades). they provide protection for underlying soft tissues and offer an extensive surface area for the attachment of skeletal muscles.

E) Long bones..

long bones are relatively long and slender. they are located in the arm and forearm, thigh and leg, palms, soles, fingers, and toes, the femur the long bone of the thigh, is the largest and heaviest bone in the body.

F). Sesamoid Bones.

sesamoid bones are usually small, round and flat. they are found near joints of the knees, hands and feet. few people have sesamoid bones at every possible location, but everyone has sesamoid patellae(pa-tel-e: singular, patella, a small shallow dish) or kneecaps.

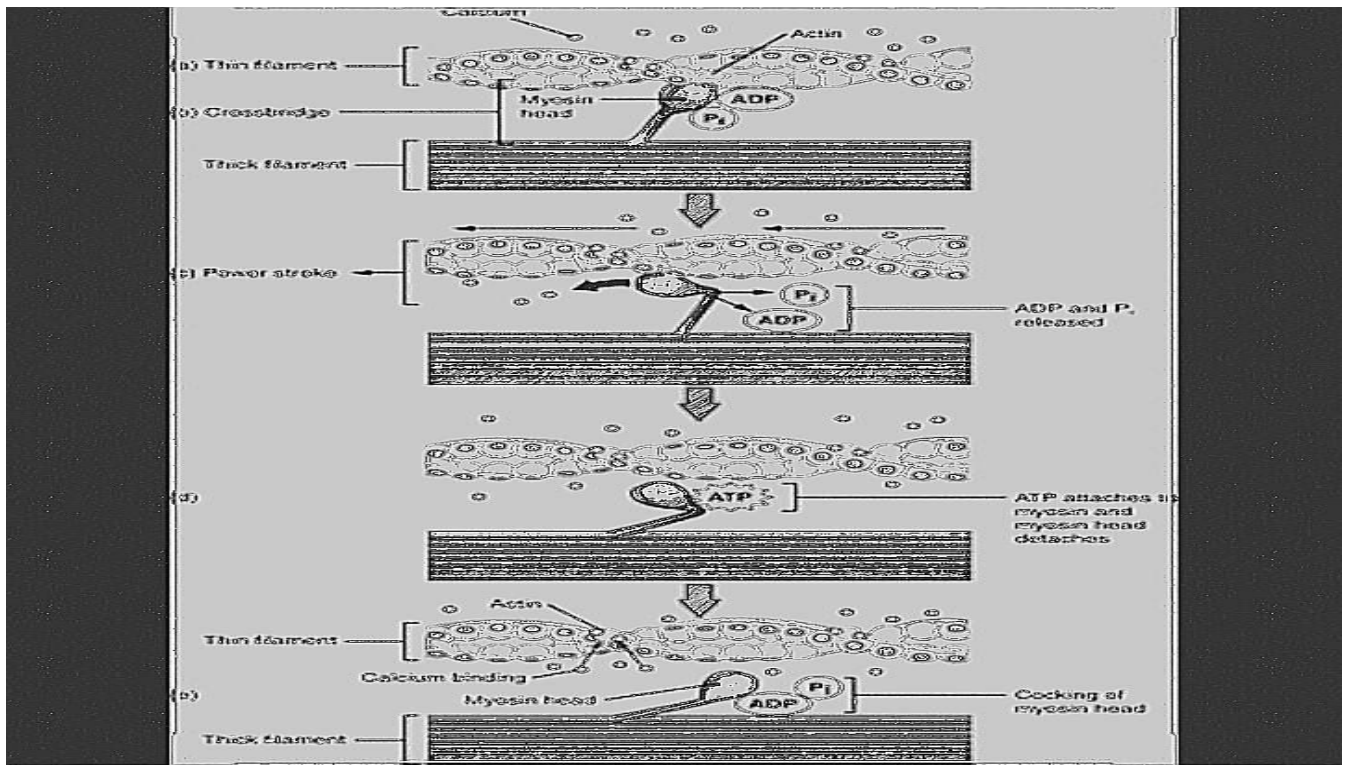
Ans 4)..

	Arteries	veins	capillaries
function	send blood from heart	send blood to heart	Material exchange with tissues
pressure	High	low	low
lumen Diameter	Narrow	wide	Extremely narrow (one cell wide)
wall Thickness	Thick	Thin	Extremely thin (single cell thick)
wall layers	Three <ul style="list-style-type: none"> • tunica adventitia • tunica media • tunica intima 	Three <ul style="list-style-type: none"> • Tunica adventita • Tunica media • Tunica intima 	one <ul style="list-style-type: none"> • Tunica intima
muscle and Elastic fibres	large amounts	small amounts	None
valves	no	yes	no

Ans 5..) Muscle contraction...

Muscle contraction occurs when the thin actin and thick myosin filaments slide past each other. it is generally assumed that this process is driven by cross - bridges which extend from the myosin filaments and cyclically interact with the actin filaments and cyclically interact with the actin filaments

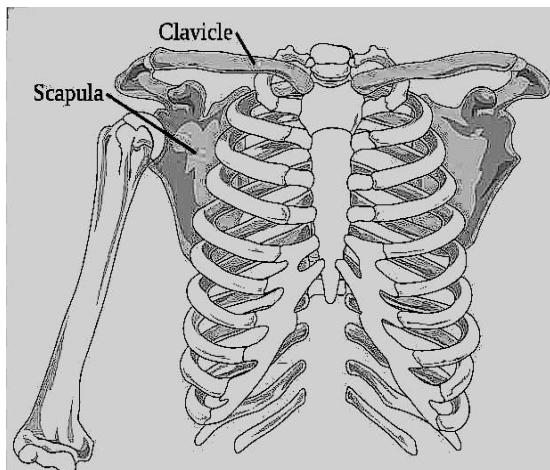
as ATP is hydrolysed..



Ans 6)... Anatomical position of scapula and clavicle..

The collarbone is a large doubly curved long bone that connects the arm to the trunk of the body. Located directly above the first rib, it acts as a strut to keep the scapula in place so that the arm can hang freely. Medially, it articulates with the manubrium of the sternum (breastbone) at the sternoclavicular joint. At its lateral end it articulates with the acromion, a process of the scapula (Shoulder blade), at the acromioclavicular joint. It has rounded medial end and a flattened lateral end.

The clavicle articulates with the scapula here, at the tip of the acromion. This other projection, looking like a



bent finger, is the coracoid process.