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-l **Instructor: Ms. Maria Feroze**

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Time: 4 hours

Note:

- **Attempt all questions from this section, all questions carry equal marks.**

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?

QUESTIONS

Q1. Define the following terms:

A) Motor unit
B) Iipsilateral
C) Supination
D) Axial skeleton
E) Arteriosclerosis

F) Shunt

ANS

1 MOTOR UNIT

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

2 Ipsilateral.

On the same side as opposed to contralateral For example a tumor involving the right side of the brain may affect vision ipsilaterally that is in the right eye

3. Supination.

Rotation of the forearm and hand so that the palm faces forwarded or upwards also a corresponding movement of the foot and leg in which the foot rolls outward with an elevated arch the position resulting form supination

4. Axial skeleton .

The axial skeleton includes all the bones along the body long axis lets work our way down this axis to learn about these structures and the bones that form them the axail skeleton includes the bones that form the skull laryngel skeleton vertebral and thoracic cage.

5. Atheroclerosis .

Refers to buildup of fats cholesteroland other substance in and on your artery walls which can restrict blood flow the plaque can burst triggering a blood clot.

6.Shunt .

To move body fluid such as cerebrospinal fluid from one place to another place .A catheter that carries cerebrospinal fluid from a verticle in the brain to another are of body a shunt may be placed from hydrocephalus .

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

Ans:

Type 1 muscle fibers

Definition

Type 1 muscle fibers are one type of muscle that are slow contracting

Type 2 muscle fibers

Type 2 muscle fibers are another type of muscle fivers that are rapid firing .

Glycogen content	Has a low glycogen content	Has a moderate level of glycogen
Contraction	Slow	Fast
Synonyms	Slow twitch muscle	Fast twitch muscle
Color	Red	Red or 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 durin activity	Recruited second during activity
Function	Help to enable long endurance distance running	Help powerful bursts of movement Fast such as like sprinting during distance.

Q3. Classify the bones according to their shape.

Ans : **Classification of bones**

According to their shape:

- Long bones
- Short bones
- Flat bones
- Irregular bones
- Sesamoid bones

Sutural Bones

Sutural bones or wormain bones are small ,flat, oddly shaped bones found between the flat bones of the skull . They range in size from a gain of send to a quarter .
Their borders are like pieces of a jigsaw puzzle.

Irregular bones

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

Short bones

Short bones are box like in appearance .Example of short bones include the carpal bones (wrists) and tarsal bones (ankles)

Flat bones

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

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 .

Sesamoid bones

Sesamoid bones are usually small, round, and flat .They are found near joint of the knees , hands, and feet Few people have sesamoid bones at every possible location but every one has sesamoid patellae(pa-TEL-e;singular petullah a small shallow dish)or kneecaps.

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

Ans:

	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> Tunica adventitia(2)Tunica media(3)Tunica intima	Three> (1) Tunica adventitia(2)Tunica media(3)Tunica intima	One: Tunica intima
Muscle and elastic fibers	Large amounts	Small amounts	None
Valves	No	Yes	No

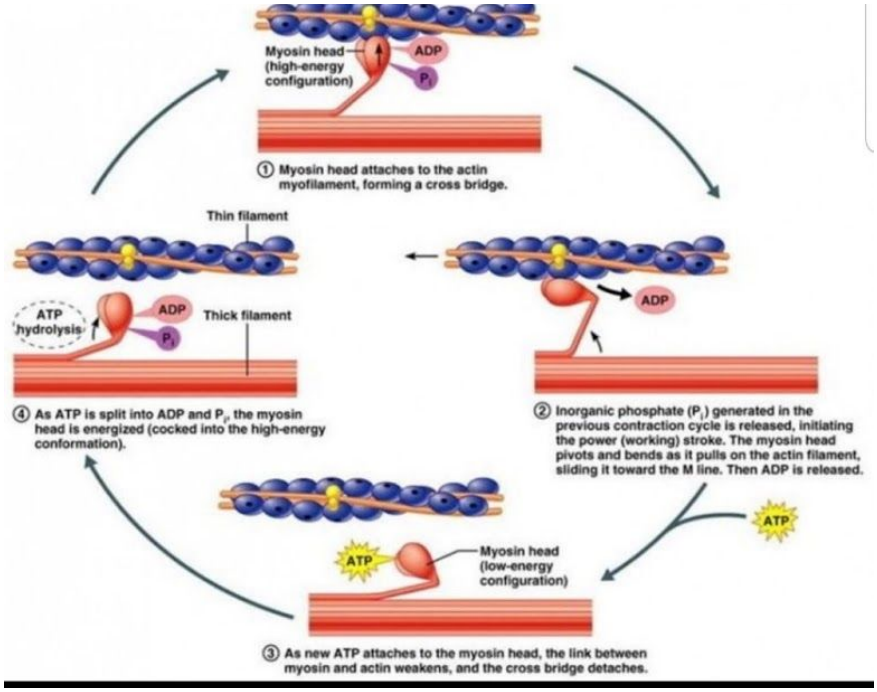
Q5. What do you know about the mechanism of skeletal muscle contraction?

Ans:

Muscle contraction

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

DIAGRAM

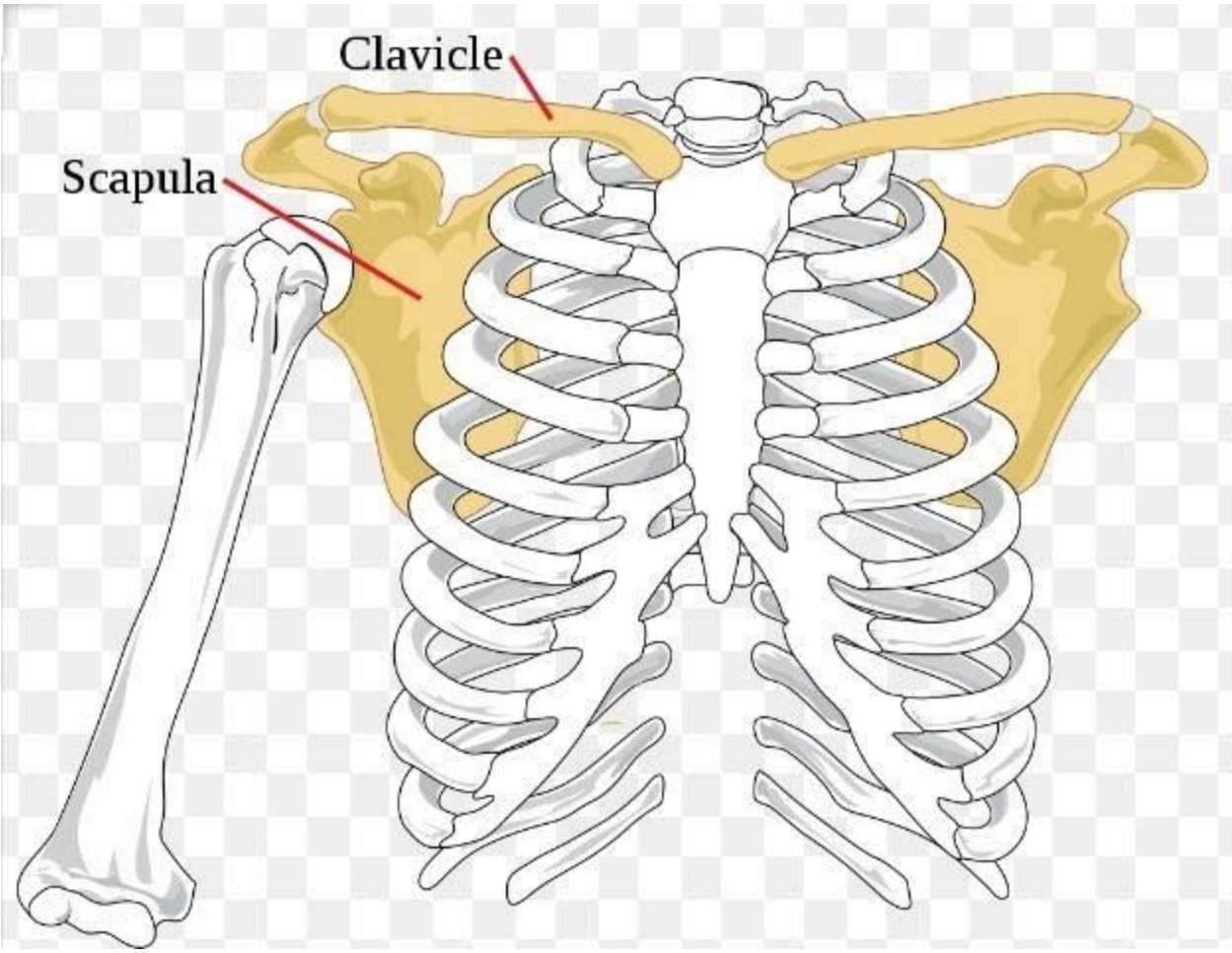


Q6. What is the anatomical position of scapula and clavicle in human body?

Ans:

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.

DIAGRAM


Clavicle
Scapula