

Lower Limb Anatomy Quiz Answer Key PDF

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Which nerve is the largest in the human body?

- A. Femoral nerve
- A. Sciatic nerve ✓**
- C. Obturator nerve
- D. tibial nerve

Which muscle is primarily responsible for hip extension?

- A. Gluteus maximus ✓**
- A. Quadriceps
- C. Hamstrings
- D. Gastrocnemius

What is the primary function of the anterior tibialis muscle?

- A. Plantarflexión
- A. Dorsiflexión ✓**
- C. Inversion
- D. Eversion

What type of joint is the knee?

- A. Ball and socket
- A. Hinge ✓**
- C. Pivot
- D. Saddle

Describe the phases of the gait cycle and their significance in walking.

The gait cycle is divided into two primary phases: the stance phase, which accounts for about 60% of the cycle where the foot is in contact with the ground, and the swing phase, which makes up the remaining 40% where the foot is in the air. The stance phase includes sub-phases such as initial contact, loading response, mid-stance, terminal stance, and pre-swing, while the swing phase includes initial swing, mid-swing, and terminal swing. Each phase plays a significant role in maintaining balance, stability, and forward propulsion during walking.

Which of the following are common injuries of the knee? (Select all that apply)

- A. ACL tear ✓**
- A. Meniscus tear ✓**
- C. Rotator cuff tear
- D. MCL sprain ✓**

Which of the following bones are part of the pelvic girdles? (Select all that apply)

- A. Ilium ✓**
- A. Ischium ✓**
- C. Pubis ✓**
- D. Femur

Which muscles are part of the hamstring group? (Select all that apply)

- A. Biceps femoris ✓**
- A. Semitendinosus ✓**
- C. Semimembranosus ✓**
- D. Rectus femoris

What is the primary movement of the quadriceps muscle group?

- A. Knee flexión
- A. Knee extension ✓**
- C. Hip abduction
- D. Hip adduction

Discuss the anatomical differences between the tibia and fibula and their respective roles in the leg.

The tibia is the larger, stronger bone located medially in the leg, responsible for bearing weight, while the fibula is a slender bone located laterally, providing stability and serving as an attachment for muscles.

Explain the role of the sciatic nerve in lower limb function and what happens when it is damaged.

The sciatic nerve plays a vital role in lower limb function by innervating the muscles of the posterior thigh, leg, and foot, as well as providing sensory information from these areas. When damaged, it can cause sciatica, characterized by pain, numbness, and weakness in the lower limb, affecting mobility and quality of life.

Which bone is the longest in the human body?

- A. tibia
- A. Femur ✓**
- C. Fibula
- D. Humerus

Which artery is the main supplier of blood to the thigh?

- A. Popliteal artery
- A. Femoral artery ✓**
- C. Anterior tibia artery
- D. Posterior tibia artery

What are the potential complications of a femoral fracture, and how might they be addressed clinically?

Potential complications of a femoral fracture include nonunion, malunion, infection, deep vein thrombosis, and damage to surrounding nerves or blood vessels. Clinically, these can be addressed through surgical fixation, monitoring for signs of infection, anticoagulation therapy to prevent thrombosis, and physical therapy for rehabilitation.

Which arteries supply blood to the lower leg and foot? (Select all that apply)

- A. Anterior tibialis artery ✓**
- A. Posterior tibialis artery ✓**
- C. Popliteal artery ✓**

D. Radical artery

Which of the following is not a bone in the foot?

- A. Talus
- A. Calcaneus
- C. Scapula ✓**
- D. Navicular

Which movements are possible at the hip joint? (Select all that apply)

- A. Flexión ✓**
- A. Extension ✓**
- C. Abduction ✓**
- D. Rotation ✓**

Which nerves innervate the thigh? (Select all that apply)

- A. Sciatic nerve ✓**
- A. Femoral nerve ✓**
- C. Obturator nerve ✓**
- D. Median nerve

How do the muscles of the lower limb contribute to maintaining balance and posture?

The muscles of the lower limb, including the quadriceps, hamstrings, calves, and hip muscles, work together to stabilize the body, control movements, and maintain an upright posture, thereby contributing significantly to balance.

Outline the process of blood circulation in the lower limb, starting from the heart.

The process of blood circulation in the lower limb starts with oxygenated blood being pumped from the heart into the aorta, which branches into the common femoral artery, and continues through the popliteal artery, tibialis anterior, and other arteries, reaching the capillaries. Deoxygenated blood is collected by venules, then veins such as the great saphenous vein, and returns to the heart via the inferior vena cava.