

Subject: Anatomy II

Mid Term Assignments.

Semester: DPT 2<sup>nd</sup>.

Dr. Attaullah

**Student: Emaan Malik**

**Dept: DPT**

**Id: 16717**

**Semester: 2nd**

Section A.

Note: Highlight the correct option of the given MCQs from section A. attempt all 3 questions from section B.

- 1. Out of the following bony landmarks to which the Ligamentum teres attached?**
  - A. intertrochanteric line
  - B. trochanteric crest
  - C. Fovea capitis**
  - D. Greater trochanter
- 2. Neck of the femur connects the head of the femur with the shaft. It is cylindrical, projecting in a superior and medial direction. It is set at an angle of \_\_\_\_\_degrees to the shaft.**
  - A. 156
  - B. 170
  - C. 135**
  - D. 101
- 3. The proximal area of the femur forms the hip joint with the acetabulum of the pelvis. It consists of a head and neck, and two bony processes the greater and lesser trochanters. There are also two bony ridges connecting the two trochanters; the intertrochanteric line anteriorly and the trochanteric crest posteriorly. Out of all these proximal bony landmarks which one is the most lateral palpable bony landmark?**
  - A. Greater trochanter**
  - B. Lesser trochanter
  - C. The intertrochanteric line
  - D. Trochanteric crest.
- 4. \_\_\_\_\_ is the site of attachment for iliopsoas muscle.**
  - A. Greater trochanter
  - B. Lesser trochanter**
  - C. The intertrochanteric line
  - D. Trochanteric crest.
- 5. Neck of femur fractures are increasingly common and tend to be sustained by the elderly population as a result of low energy falls in the presence of osteoporotic bone. Classically, the distal fragment is pulled upwards and \_\_\_\_\_**
  - A. Medially rotated
  - B. Externally rotated**
  - C. No rotation occurs
  - D. None of the above
- 6. Regarding neck of the femur fracture the medial femoral circumflex artery can be damage in \_\_\_\_\_**
  - A. Intracapsular fracture**
  - B. Shaft fracture
  - C. Extracapsular fracture
  - D. Femoral epicondylar fracture
- 7. The shaft of the femur descends in slight \_\_\_\_\_ for stability.**
  - A. Lateral direction
  - B. Medial direction**
  - C. Posterior direction
  - D. Diagonal direction
- 8. Mr. A met with an accident and his right femur broke at 3 different places. The cut was a clean break and the four pieces were put back together in their original place. What kind of fracture did he have?**
  - A. Contusion
  - B. Hairline Fracture
  - C. Multiple Fracture**
  - D. Simple Fracture
- 9. A closed femoral shaft fracture can result in \_\_\_\_\_ blood loss.**
  - A. 10-15ml

- B. 100-150ml  
**C. 1000-1500ml**  
 D. 10000-15000ml
10. Which of the following is the medial bone of lower leg?  
 A. Patella  
 B. Fibula  
**C. Tibia**  
 D. Medial cuboid
11. The shaft of the tibia is prism-shaped, with \_\_\_\_\_  
 A. One border and one surface  
 B. Two borders and one surface  
 C. Three borders and two surfaces  
**D. Three borders and three surfaces**
12. The calcaneus is often fractured as a result of \_\_\_\_\_  
 A. Distraction  
**B. Axial loading**
- C. Walking  
 D. Setting
13. The depth of the acetabulum is raised by the \_\_\_\_\_  
 A. Fovea captious  
 B. Capsule of hip joint  
**C. acetabular labrum**  
 D. ischial Bursae
14. The most powerful ligament of hip joint is?  
**A. Iliofemoral ligament**  
 B. Pubofemoral ligament.  
 C. Ischiofemoral ligament.  
 D. Transverse acetabular ligament
15. The hip joint is supplied by the branches of the following arteries EXCEPT:  
 A. Medial circumflex femoral artery.  
 B. Lateral circumflex femoral artery.  
**C. Radial artery.**  
 D. Superior gluteal artery.

### Section B

***Q:1 Describe Hip joint anatomy. (your answer should cover these headings, (Articular surfaces of hip joint, Ligaments of joint, Stability of hip joint, Blood and nerve supply).***

**ANS: ARTICULAR SURFACE :**

Hip joint is a synovial joint (ball and socket). In hip joint the head of the femur articulates with the acetabulum of the hip bone. The acetabulum is shaped like a horse shoe.

#### ***LIGAMENTS:***

***Capsular ligament:*** The capsular ligament is large sized ligament, it is a combination of two types of fibres outer longitudinal fibres and inner circular fibres

***Iliofemoral Ligament:*** This ligament is an upside down Y- shaped ligament which is found anteriorly. Iliofemoral ligament is the most powerful ligament of this joint

***Pubofemoral ligament:*** It is useful in supporting the hip joint. It is shaped like a triangle. The base of this ligament is connected to the obturator crest and superior pubic ramus.

***Ischiofemoral Ligament:*** This ligament is the weakest of all the other ligaments but it

Supports the capsule posteriorly. It is attached to the ischium like its name shows.

**Ligament of the head of the Femur:** Also known as ligamentum teres of the head of the Femur. Its peak is attached to the fovea of the head and the base connects to the acetabular Ligamentum teres is flat and shaped like a triangle

**Transverse Acetabular ligament:** It is a chunk of Acetabular labrum and lacks cartilage Cells

### ***STABILITY:***

Hip joint is stable because of the following reasons and factors

1. It has some powerful ligaments which helps in joint stability I.e Iliofemoral ligament, Pubofemoral ligament and ischiofemoral ligaments.
2. It has acetabular Labrum which helps in raising the depth of acetabulum.
3. The hips joint has muscles which keeps the bones intact.
4. The length of the neck of femur also contributes to stability

### ***NERVE SUPPLY:***

The hip joint is supplied through branches from:

- 1) Obturator
- 2) Sciatic nerves
- 3) Femoral
- 4) Superior Gluteal nerves

### ***ARTERIAL SUPPLY:***

Following are the arteries which supply the hip joint

1. Obturator artery
2. Medial circumflex femoral artery
3. Lateral circumflex femoral artery
4. Superior gluteal artery

## 5. Inferior gluteal artery

**Q:2** Explain the following in detail.

- a) Cruciate ligaments
- b) Menisci

### **ANS A): CRUCIATE LIGAMENTS:**

There are two types of cruciate ligaments, these are present in the knee joint. Cruciate means cross in latin so these ligaments cross one another that's why they are given this name.

#### **TYPES:**

**Anterior Cruciate Ligament:** This ligament stops anterior dislocation of tibia, it is connected to intercondylar part of the tibia it later combines with the medial meniscus. In order to attach to the femur it moves up posteriorly.

**Posterior Cruciate Ligament:** It protects the tibia from posterior dislocation. It is found on the posterior intercondylar part of tibia and this one moves up anteriorly in order to be attached to the anteromedial femoral condyle

### **ANS B): MENISCI**

There are two meniscus one medial and the other, lateral. Menisci are made up of fibrocartilage, they are present in the knees shaped like a C and both are attached to intercondylar of tibia but the medial one is connected to the joint capsule and to the tibial collateral ligament too. Lateral meniscus is small in size and has no other attachments, which makes it mobile.

#### **FUNCTIONS:**

1. It helps in raising the depth of articular surfaces of tibia resulting in stability.
2. Provides a big surface area to disperse the force acting like a shock pad.

**Q:3** Write down a comprehensive note on medial and lateral ligaments of ankle joint

### **ANS: LIGAMENTS OF ANKLE JOINT:**

There are two main ligaments of ankle joint.

- Medial ligaments

- Lateral ligaments

## **I. MEDIAL LIGAMENTS:**

Also known as deltoid ligament is connected to medial malleolus. It stops the foot from over-eversion. Medial ligament has four further ligaments which are attached to calcaneus, talus and navicular bones.

## **II. LATERAL LIGAMENT:**

The ligament arises from the lateral malleolus, opposite to the medial ligament. It protects the foot from over-inversion. Lateral ligament has further 3 more ligaments

- Anterior talofibular ligament
- Posterior talofibular ligament
- Calcaneal fibular ligament

**ANTERIOR TALOFIBULAR LIGAMENT:** It is weaker than other ligaments. It is found in the middle of lateral malleolus and lateral part of the talus

**POSTERIOR TALOFIBULAR LIGAMENT:** It is comparatively stronger than other lateral ligaments, it arises from the posterior border of fibula and helps in limiting some movements such as external and internal rotation, dorsiflexion etc. It provides extra stability to the ankle joint.

**CALCANEAL FIBULAR LIGAMENT:** It limits the talar tilt. Derived from anterior border of fibula it is present deep to peroneal sheaths and distal to subtalar joint OR between calcaneus and malleolus.