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paper :

Anatomy

Submitted To :

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Iqra national university Peshawar

Mid-Term Assignment (Spring 2020) (DPT 2nd Semester- sec B)

Course Title: Human Anatomy II **Instructor: Dr. Maria Feroze**

Time Allowed: 48 hours **Max marks: 30**

- **Note: This assignment has two sections (section 1: MCQs and section 2: Q/Ans). Solve both.**

SECTION 1: Multiple Choice Questions

Max Marks: 15

1. **Fibular shaft has**
    1. **Four borders**
    2. **Two borders two surfaces**
    3. **Four borders four surfaces**
    4. **Four surfaces**
    5. **Two borders four surfaces**

    Which of the following is true?

    A. 1 and 4
    B. 2, 3 and 4
    C. 1, 3 and 4
    D. 1,3 ,4 and 5
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. **Patella is the bone of _____**
    A. Leg
    B. Foot
    C. Only distal end of leg
    D. Both a and c
5. **Metatarsal bones form the _____**
    A. Hind foot
    B. Mid foot
    C. Fore foot
    D. Both b and c
6. **Which of the following metatarsals usually has its growth plates situated proximally**
    A. First metatarsal
    B. First and second metatarsals
    C. Second and third metatarsals
    D. Third metatarsal
7. **The shaft of the femur descends in slight_____ for stability.**
    A. Lateral direction
    B. Medial direction
    C. Posterior direction
    D. Diagonal direction
8. **Which structure/s connects the apex of patella to the tibial tuberosity?**
    A. Patellar Ligament
    B. Patellar Tendon
    C. Distal portion of the common tendon of the quadriceps femoris
    D. Both A and B
    E. All of the above
9. **Below , the tibia articulates with _____**
    A. Distal end of fibula only
    B. Distal end of fibula and talus bone
    C. Distal end of fibula, talus bone and a small portion of calcaneus
    D. All are true
10. **Which of the following is the medial bone of lower leg?**
    A. Tibia
    B. Fibula
    C. Medial cuboid

D. Both a and c

11. Which of the following ligaments is fully covered by synovial membrane?

A. Iliofemoral ligament
B. Pubofemoral ligament
C. Ischiofemoral ligament
D. Transverse Acetabular ligament
E. Ligament of the head of femur

12. The calcaneus is often fractured as a result of _____

A. Distraction
B. Axial loading
C. Twisting
D. Walking
E. Sitting

13. The depth of the acetabulum is raised by the_____

A. Acetabular fat pad
B. Capsule of hip joint
C. Acetabular labrum
D. Ischial Bursa
E. Both b and c

14. The most powerful ligament of hip joint is?

A. Iliofemoral ligament
B. Pubofemoral ligament.
C. Ischiofemoral ligament.
D. Transverse acetabular ligament
E. All are powerful as they are ligaments of hip joint

15. **Sartorius muscle helps in the movement of _____**

A. Flexion
B. Flexion and abduction
C. Flexion, abduction and lateral rotation
D. All are true

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Note:

- **This assignment has two sections (section 1: MCQs and section 2: Q/Ans). Solve both.**
- **You can use Google as a source of help but refrain from copy pasting the data directly from these sources.**
- **More than 25% plagiarism (similarity) in your answer will not be acceptable.**
- **Attempt all questions from this section, all questions carry equal marks.**

SECTION NO 2: Q/Ans

Max Marks: 15

Q:1 Describe ankle mortise in your own words.

Q:2 A patient comes to your clinic with gait imbalance. You ask him to stand upright from a sitting position and then rotate his left leg towards his left side. Which of the hip joint muscles of the left side become active during this whole movement?

Q :3 write down note on :

a) Difference in the size and shape of femoral condyles
b) Weight bearing status of fibula

c) artioculation of calcaneus

Section B

Q:1 Describe ankle mortise in your own words.

Ans: The tibia and fibula form the so-called "ankle mortise" which consist of the medial and lateral malleoli. In the distal end of the ankle mortise sits the trochlea tali ,the upper surface of the talus.this allows the articular surfaces to glide upon each other assures the cartilage surfaces to move freely. The bony anatomy of the lower ankle joint is less complex an the front part of the lower ankle joint is an articulation between talus ,calcaneus,and navicular bone. The back part of the lower ankle joint is an articulation between talus and calcaneus and is called subtalar joint.

Ankle 15-35 degree internal rotation(20-25) commonly used.

Avaulate articular surface between talar dome and mortise .

- Measurement in mortise view:
- Medial clear space

Between lateral border of medial malleolus and medial talus

>4mm is normal

>4mm suggest lateral shift of talus.

Q :2 A patient comes to your clinic with gait imbalance. You ask him to stand upright from a sitting position and then rotate his left leg towards his left side. Which of the hip joint muscles of the left side become active during this whole movement?

Ans: The trendelburg test is a quick physical examination that can assist the therapist for any hip dysfunction.

A positive trendelburg test usually indicates weekness in the hip abductor muscle.

Gleteuis medius and minimus are the primary abductor of the hip when fully weight bearing they act to adduct the femur away from the mid line of the body and provide and provide stability of the hip and pelvis.

A patient with malfunctiong hip abductor will present with a positive trendleburg sign their : their pelvis drops toward the side of the raised limb. The positive sign significes that the abductor muscle on the standing limb are weekend or paralysed . for example if the leg was raised, and pelvic drop was observed on that side ,the abductor muscle on the right leg was caused.

The injury can be neurogenic or myogenic which the muscle fibre are stretched are weekend but the nerve remain functional.

A myogenic caused can be addressed muscle strengthing with exersices and physical therapy ; a neurogenic cause is more difficult and sometimes imposible to treat.

Q :3 write down note on :

a) Difference in the size and shape of femoral condyles

b) Weight bearing status of fibula.

c) Articulation of calcaneus

A) Difference in the size and shape of femoral condyles:

The femoral condyles form the troclear groove that provide the articulating surface of the femur. Similar to the articular surface of the patella ,the troclear surface is divided into medial and lateral facets , the lateral facet being larger and extending more proximally and anteriorely. Than its medial counterpart.the larger lateral femoral condyle provide bony betress that help provide lateral pateler stability.

No significant difference among groove type was observed regarding size parameters.there were significant when comparing type 45 degree with types 60 degree,75,and 90 regarding aspect ratio and distal end angle.

B) Weight bearing status of fibula:

the fibula is an non weight bearing bone that originate just below the lateral tibial plateau and extnds distally to form the lateral malleolus which is the portion of fibula distal to the superior articular surface of the talus. The lateral malleolus provide key stabuility against excessive eversion of the ankle and foot. the ankle joint weight distribution to the fibula amounted to 6.4 with dorsification of ankle joint, the weight of fibula increased . with the plantar flexion of the ankle joint, the weight of fibula decreased. Lateral and posterior loading of the tibia produce increase weight on the fibula.

c) **Articulation of calcaneus**:

The calceneus also known as the heel bone, is found at the back of the foot near the ankle , just below the talus' tibia, and fibula bones of the lower leg. It is the largest bone in the foot . it project posterior to the tibia and act as a short level for calf muscle . it articulate with talus superiorly and the cuboid anteriorly and share a joint space with talonavicular joint. The calcenus transfer most of the body weight from the lower limb to the ground.the calcenus ias an irregular ,roughly box- shaped bone sitting below the talus. Its long axis is oriented along the mid line of the foot, however derivates latererly to the mid line anteriorly. It project posteriorly to form the core of the heel.