**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**

 **Name:Muhammad Abbas ID:16805 Department:DPT**

**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**
2. **Four borders**
3. **Two borders two surfaces**
4. **Four borders four surfaces**
5. **Four surfaces**
6. **Two borders four surfaces**

**Which of the following is true?**

1. 1 and 4
2. 2, 3 and 4
3. 1, 3 and 4
4. 1,3 ,4 and 5
5. **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.**
6. 156
7. 170
8. 135
9. 101
10. **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?**
11. Greater trochanter
12. Lesser trochanter
13. The intertrochanteric line
14. Trochanteric crest.
15. **Patella is the bone of \_\_\_\_\_\_\_\_**
16. Leg
17. Foot
18. Only distal end of leg
19. Both a and c
20. **Metatarsal bones form the \_\_\_\_\_\_**
21. Hind foot
22. Mid foot
23. Fore foot
24. Both b and c
25. **Which of the following metatarsals usually has its growth plates situated proximally**
26. First metatarsal
27. First and second metatarsals
28. Second and third metatarsals
29. Third metatarsal
30. **The shaft of the femur descends in slight\_\_\_\_\_\_\_\_\_\_\_\_ for stability.**
31. Lateral direction
32. Medial direction
33. Posterior direction
34. Diagonal direction
35. **Which structure/s connects the apex of patella to the tibial tuberosity?**
36. Patellar Ligament
37. Patellar Tendon
38. Distal portion of the common tendon of the quadriceps femoris
39. Both A and B
40. All of the above
41. **Below , the tibia articulates with \_\_\_\_\_\_\_**
42. Distal end of fibula only
43. Distal end of fibula and talus bone
44. Distal end of fibula, talus bone and a small portion of calcaneus
45. All are true
46. **Which of the following is the medial bone of lower leg?**
47. Tibia
48. Fibula
49. Medial cuboid
50. Both a and c
51. **Which of the following ligaments is fully covered by synovial membrane?**
52. Iliofemoralligament
53. Pubofemoralligament
54. Ischiofemoralligament
55. Transverse Acetabularligament
56. Ligament of the head of femur
57. **The calcaneus is often fractured as a result of \_\_\_\_\_**
58. Distraction
59. Axial loading
60. Twisting
61. Walking
62. Sitting
63. **The depth of the acetabulum is raised by the\_\_\_\_\_\_**
64. Acetabular fat pad
65. Capsule of hip joint
66. Acetabular labrum
67. Ischial Bursa
68. Both b and c
69. **The most powerful ligament of hip joint is?**
70. Iliofemoral ligament
71. Pubofemoral ligament.
72. Ischiofemoral ligament.
73. Transverse acetabular ligament
74. All are powerful as they are ligaments of hip joint
75. **Sartorius muscle helps in the movement of \_\_\_\_\_\_\_**
76. Flexion
77. Flexion and abduction
78. Flexion, abduction and lateral rotation
79. 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 a note on:

1. Articulations of calcaneus
2. Differenc e/ in the size and shape of femoral condyles
3. Weight bearing status of fibula

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Ans 1: ANKLE MORTISE;

 --------------------------The word ankle means bent. It is also known as talocrural region, the reigion where foot and leg meet . This is formed by 3 bones

 The tibia and fibula of the leg and the talus of the foot. The tibia and fibula are bound together they form

 a barket shaped socket,covered in hyaline cartilage this socket is known is mortise. The articulation between the tibia and the talis bear more weight then that between the smaller fibula and the talus.

 The anklejoint is a synovial joint located in the lower limb.funtionally it is a hinge type joint,permitting dorsifleion and plantarflexion of the foot. As we know it is formed by tibia,fibula of leg and the talus of the foot thus the tibia and fibula are bound together by strong tibiofibular ligments togather,they formed a bracket shape socket , covered in hayaline cartilage whick is called mortise . The body of talus fits snugly into the mortise formed by bones of the leg .the articulating part of the tlus is wedge shaped it is broad anteriorly,and narrow posteriorly. The anterior part of the talus is held in the mortise,and the joint is more stable which is called dorsiflexion while the posterior part of the talus is held in the mortise,and the joint is less stable. There are two main set of ligments,which is originated from each malleolus.these two ligments are Medial ligment and Lateral ligment. The medial ligment is attached to the medial malleolus . it consists of four ligaments which fan out from the malleolus ,attaching to the talus ,calcaneus and navicular bones.the primary action of the medial ligment is to resist over-eversion of the foot.While the lateral ligment originates from the lateral malleolus .it resists over inversion of the foot , and is compised of three distinct and separate ligments which are Anterior talofibular which is span between the leteral malleolus and letral aspect of the talus. Posterior talofibular which is a span between lateral malleolus and the posterior aspect of the talus.Calcaneofibular which is a span between the lateral malleous and the calcaneus. The ankle joint is a hinge type joint with movement permitted in one plane. Thus plantarflexion and dorsflexion are the main movement that occurenat the ankle joint. Eversion and inversion are produceat the other joint of the foot such as subtalar joint.Planterflxion produce by the muscle in the posterior comarptment of the leg while Dorflexion produce by the muscles in the anterior compartment of the leg.

Q.2:

Ans; The rotator cuff muscle activate in this whole movement.

# Ans 3(a); Articulation of calcaneus ;

 ------------------------------------------ It is also known as heel bone .its is found at the back of the foot near the ankle,just below the talus,tibiaand fibula bones of the lower leg. The calcaneus is the largest bone in the foot .it projects posterior to the tibia and fibula bones and act as a short level for the claf muscle which inert onto its posterior surface through Achilles tendons. It also play an important role in weight bearing and stability. The calcaneus also refered to as the calcaneum is the largest tarsal bone and and the major bone is hindfoot. It articulate with the hiluds superiorly and the cuboid anteriorly and share a joint space with the talonavicular joint,appropriately called the talocaneonavicular joint.the calcaneus transfers most of the body weight from the lower limb to the ground. \_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# (b);Size And Shape of femoral condyle

The femoral condyles form the trochlear groove that provides the articulating surface of the femur .Similar to the articular surface of the patkella,the trochlear surface is divided into medical and lateral facets,the lateral facet being larger and extending more proximally and anteriorly than its medical counterpart.The larger lateral femoral condyle provides a bony buttress that helps provide lateral patellar stability .The trochlear groove is shallower proximally than distally,indicating that bony stability is compromised as the patella moves superiorly during terminal knee extension .The cartilage covering the trochlear surface of the femur is much thinner than that covering the patella.

(c) ; WEIGHT BEARING STATUS OF FIBULA ; the fibula is a non weight bearing bone that originate just below the letral tibial plateau and extend distally to formlateral malleolus ,which is the portion of the fibula distal to the superior articular surface of the talus . In lower animals ,the fibula is considered one of the most important supporting structures of the leg. However,with man conversion from digitgrade to plantigrade ambition,anthropologistsand anatomist have givena leesr,if not a vestigial function to the fibula a structure may change into response to new task or a change in shape may allowit to assume new function .we assume that a definite function form relation ship obtian in our stududies for skeletal architecture of thebody.Generallyin studies in whchthe biochemicalproperties of a bone have been measured,there has been a farily good correlation between the function predirect on the basis of shaped and spatial loreintation of bone and the actual function of bone.Assumption concering the function of fibula are based on anatomical concepts of fibulas a letral struct to the ankle represent schematically .on the basis of this concept,the anatomist and the clinication have assigened to the fibula the role of being an outrigger for the origion and insertion of muscle,the distal expension of which serves during moition at the tolocruraljoint.it has been generally acceptedwith few expection that all theweight appliedto the lower extermitiesduring the lantrigrade activityis transmitted across the tibial plafond to the dome of talus with the fibula serving as a letral buttress but not participatingin axial loadingor weight bearing.