**Final-Term Assignment/Paper (spring -020)**

**Human Anatomy-II**

**BS Radiology Sec-A 2nd Semester)**

**Instructor: Dr. M.Jaffar**

**Time: 6-hours (9am-3pm) Max Marks: 50**

Khadija Id 16342 Bs Radiology 2nd semester:

Q1. Write anterior compartment of thigh and posterior compartment of leg muscles with origin, insertion and action. (10)

Q2. Define the following (10).

1. Endocrine gland
2. Exocrine gland
3. Thalamus
4. femoral triangle

Q3. Write the Extraocular muscles. Enlist both voluntary and involuntary. (10)

Q4. Describe the arches of foot and functions of arches. (10)

Q5. Write a note on cerebrum, its lobes and functions. (10).

ANSWER:1

THIGH:

The part of lower limb in humans between the hip and the knee is called thigh

.ANTERIOR COMPARTMENT OF THIGH:

.Quadriceps

.RECTUS FEMORIS:

.ORIGIN:

Anterior inferior iliac spine,margin of acetabulum.

.INSERTION:

Patella and tibial tuberosity via the patellar ligament.

.ACTION:

Extends knees ,flexes thigh.

.Vastus Lateralis

.Vastus medialis

.Vastus intermedius

.ORGIN:

Femur.

.INSERTION:

Patella and tibial tuberosity via the patellar.

.ACTION:

Extend knee

SARTORIUS:

ORGIN:

Anterior superior iliac spine

.INSERTION:

Medial tibial.

ACTION:

Flex,abduct,lateral rotate thigh;weak knee flexor.

.ILIOPSOAS:

.ORGIN:

Ilia,sacrum,lumber vertebrae.

.INSERTION:

Lesser trochanter

.ACTION:

Flexor of thigh.

.INNERVATION:

Femoral nerve.

.ADDUCTORS:

.Adductor longus

.Adductor brevis

.Adductor magnus

.ORIGIN:

Inferior pelvis

.INSERTION:

.Femur

.ACTION:

Adducts and medial rotates

.INNERVATION:

Obturator nerve.

.PECTINEUS:

.ORIGIN:

Pubis.

.INSERTION:

Lesser trochanter

.ACTION:

Adducts medial rotates.

.INNERVATION:

Femoral ,sometimes obturator.

.GRACILIS:

.ORIGIN:

Pubis.

INSERTION:

Medial tibia

ACTION:

Adducts thigh,flexor,medial,rotates leg Innervation Obturator nerve.

LEG:

The lower limb of human being from knee to ankle is called leg.

.POSTERIOR COMPARTMENT SUPERFICIAL ND DEEP LAYER:

Plantar flex foot,flex toes

Innervation:Tibial nerve

.SUPERFICIAL DEEP COMPARTMENT:

.Triceps surae

.GASTROCNEMIUS (2heads)

.ORIGIN:

.Medial and lateral condyles of femur.

.INSERTION:

.Posterior calcaneus via Achilles tendon

.SOLEUS:

.ORIGIN:

.Tibia and fibula.

.INSERTION:

Same as above.

.ACTION OF BOTH:

Plantarflex foot.

.PLANTARIS(VARIABLE):

.ORIGIN:

.Posterior femur

.INSERTION:

.Same as above.

.ACTION:

.Plantarflex foot,weak knee flexsion

All innervated by tibial nerve.

DEEP POSTERIOR COMPARTMENT:

.POPLITEUS:

.ORIGIN:

 Lateral condyle femur and lateral meniscus.

.INSERTION:

Proximal tibia.

ACTION:

.Flex and medially rotate leg.

.FLEXOR DIGITORUM LONGUS:

.ORIGIN:

.Tibia

.INSERTION:

.Distal phalanges of toe2-5.

.ACTION:

Plantarflex and invert foot,flex toe.

.FLEXOR HALLUCIS LONGUS:

.ORIGIN:

.Fibula.

.INSERTION:

.Distal phalanx of hallux.

ACTION:

Plantarflex and invert foot,flex toe.

.TIBIALIS POSTERIOR:

.ORIGIN:

.Tibia,fibula and interosseous membrane.

.INSERTION:

.Tarsals and metatarsals.

.ACTION:

.Plantarflex and invert foot.

.All innervated by tibial nerve.

.ANSWER :2

.Part:A

.ENDOCRINE GLAND:

Glands that secrete their product(hormones) directly into the blood rather than through a duct.

EXAMPLES:

.Pituitary Gland.

.Thyroid Gland.

.Adrenal Gland

PART :B

.EXOCRINE GLAND:

Exocrine glands are the glands that secrete heir products into the ducts.

EXAMPLES:

.Sweat Glands.

Salivary Glands.

.Liver.

PART :C

.THALAMUS:

.The middle part of diencephalon through which sensory impulses pass to reach the cerebral cortex.

.The thalamus is a small structure within in the brain located just above the brain stem between cerebral cortex and the midbrain and has extensive nerve connections to both.

.FUNCTION OF THALAMUS:

.The main function of thalamus is to relay motor and sensory signals to the cerebral cortex.

.It also regulates sleep alertness and wakefulness.

PART :D

.FEMORAL TRIANGLE:

.A triangle space at the upper part of thigh,bounded by the sartorius and adductor longus muscles and the inguinal ligament.

.It is also known as Scarpa’s triangle.

.ANSWER :3

.EXTRAOCULAR MUSCLES:

The extraocular muscles are six the muscles that control movement of the eye and one muscle that controls eyelid elevation (levator palpebrae).The action of the six muscles responsible for the eye movement depend on the position of eye at the time of muscle contraction.

.VOLUNTARY MUSCLES:

.Superior rectus

.Inferior rectus

.Medial rectus

.Lateral rectus

.Superior Oblique

.Inferior Oblique

.Levator palpebrae

.INVOLUNTARY MUSCLES:

.Superior tarsal or Muller’s muscle

.Inferior tarsal muscle.

.ANSWER :4

ARCH:

A curved bony structure supporting or enclosing organs(especially the inner side of the feet).

ARCHES OF FOOT:

.Bones of the foot are arranged to form three strong arches.

.Arches are fully developed by age of 12 and 13.

.Two longitudinal (Lateral and Medial)

.One transverse

.FUNCTION OF ARCHES:

.Act as a spring which helps in walking and and stepping.

.Arches help the foot support and distribute the weight of the body and provide leverage during walking.

.Concavity of arches protects the soft tissues of sole against pressure.

ANSWER:5

.CEREBRUM:

.Cerebrum is the largest and upper most portion of the brain.The cerebrum consist of cerebral hemispheres and accounts for two third of total weight of the brain.They communicate via corpus collosum..Cerbral cortex is the outer region of cerebrum.

.FUNCTION OF CEREBRUM:

.It helps in movement.

.It control speech.

.It is responsible for sensory processing.

.LOBES OF BRAIN:

.There are four lobes of brain.

1.Frontal lobe

2.Parietal lobe

3.Occipital lobe

4.Temporal lobe

1.FRONTAL LOBE:

The frontal lobe is the most interior part of the cerebrum.

.Also called motor cortex.

.FUNCTION:

.It relates your personality e.g speaking,walking ,dressing.

.It is also responsible for judgment.

.Also abstract reasoning.

.Responsible for social behaviour like how we deal in society.

2.PARIETAL LOBE:

.Parietal lobe is situated between the frontal and occipital lobes and separated from them by central and parieto occipital sulci

.It is also called as sensory cortex.

.FUNCTION:

.It is involved in language and calculation as well as perception of various sensations such as touch pain and pressure.

.Receive and interprets nerve impulse from sensory receptors and interprets language.

3.OCCIPITAL LOBE:

.It is the most posterior part of cerebrum.

.It is also called visual cortex.

.FUNCTION:

.Receive input from eyes and control vision.

4.TEMPORAL LOBE:

.We have the left and right lateral portion of cerebrum(on the sides of your head above your ears.

.It is also called auditory cortex.

.FUNCTION:

.Controls hearing and smell.

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