

**COURSE TITLE: RADIOLOGICAL AND CROSS  
SECTIONAL ANATOMY (RAD 6<sup>TH</sup> SEMESTER)**

**FINAL TERM ASSIGNMENT**

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**CLASS ID: 13957**

**Note:**

- **Write in your own words, do not copy paste.**
- **Use only MS word to attempt questions.**

Time: 6hrs

Marks:50

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Attempt all questions. Each question carry equal marks.

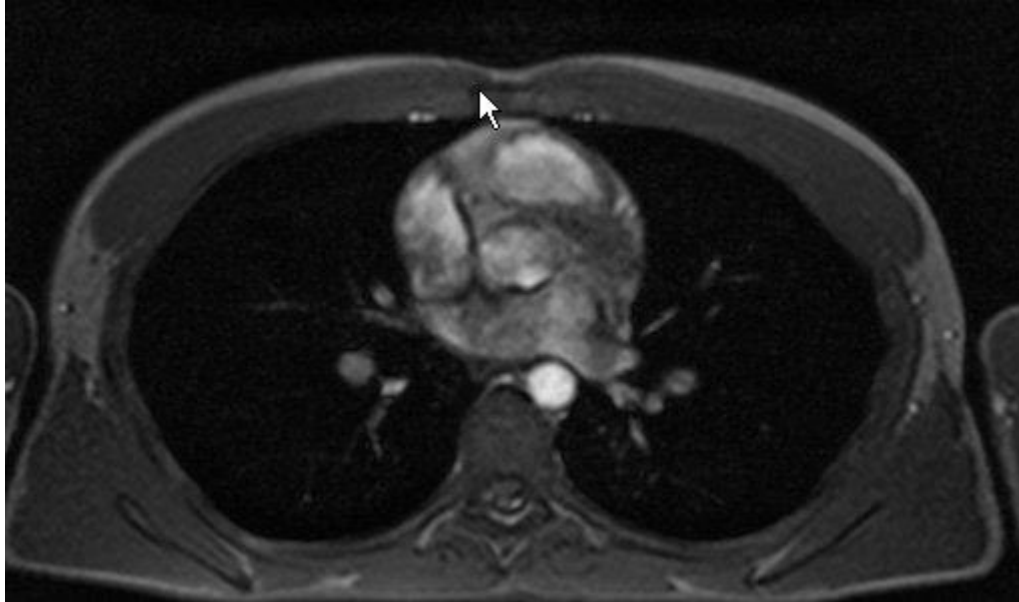
**Q1. Which structures appear on the MRI of Heart? Name any 10 of them.**

**Ans:- Structures which appear on the MRI of Heart:**  
structures appear on the MRI of heart are the following

1. Heart chamber.
2. Heart valves.
3. Pericardium.
4. Blood vessel of the heart (coronary vessels).
5. Body of sternum(Chest bone)
6. Right lung
7. Left lung
8. Spinal cord
9. Right lobe of liver
10. Oesophagus
11. Thoracic Aorta
12. Dome of diaphragm
13. Inferior vena cava
14. Spleen
15. Body of stomach(fundus)

- 16. Body of pancreas
- 17. Azygos vein

### **MRI of Human Heart**



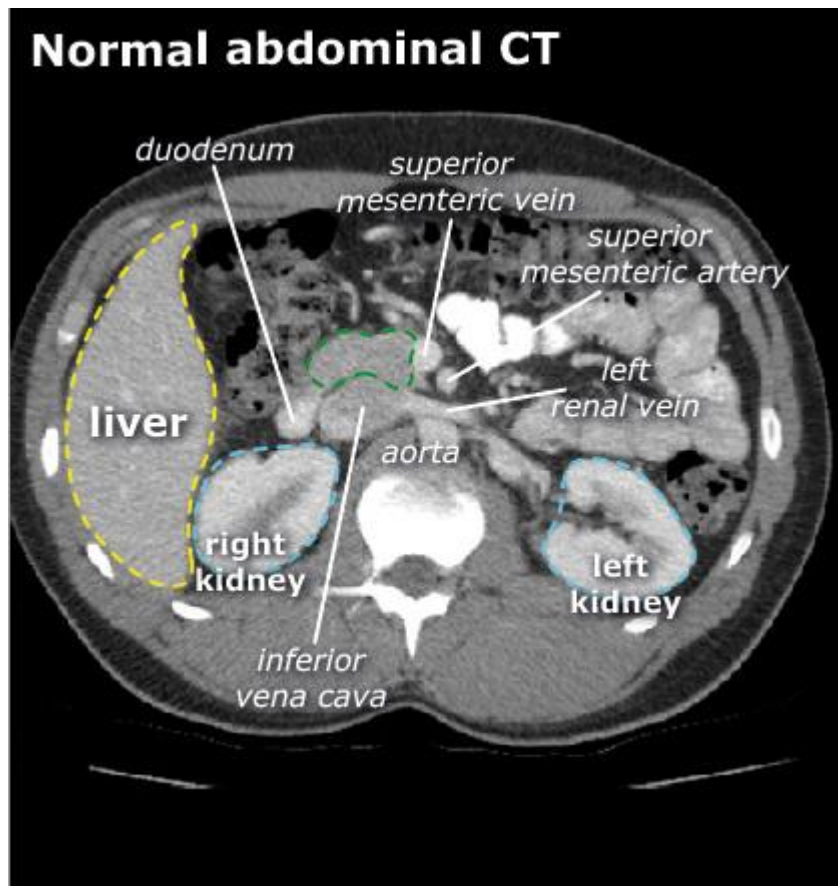
**Q2. Name the arteries that appears on performing CT Abdomen.**

**Ans: arteries appear on performing CT abdomen:**

The Arteries which appear on performing CT of abdomen are as follows

1. Splenic artery
2. Coeliac artery
3. Right renal artery
4. Superior mesenteric artery
5. Common iliac artery
6. Internal iliac artery
7. External iliac artery

## Abdominal CT scan



**Q3. Write short notes on Thoracic and Lumbar spines.**

**Ans: Thoracic and lumbar spine:**

a) Thoracic spine :-

**Definition:-** thoracic spine is the second segment of the vertebral column located between the cervical and lumbar vertebral segments.

**Composition:-** it consists of twelve vertebrae which are separated from each other by intervertebral disk.

Thoracic spine is located between the upper back and abdomen and is one of three major sections of the spinal column. Along with the sternum and ribs, the thoracic spine forms part of the thoracic cage.

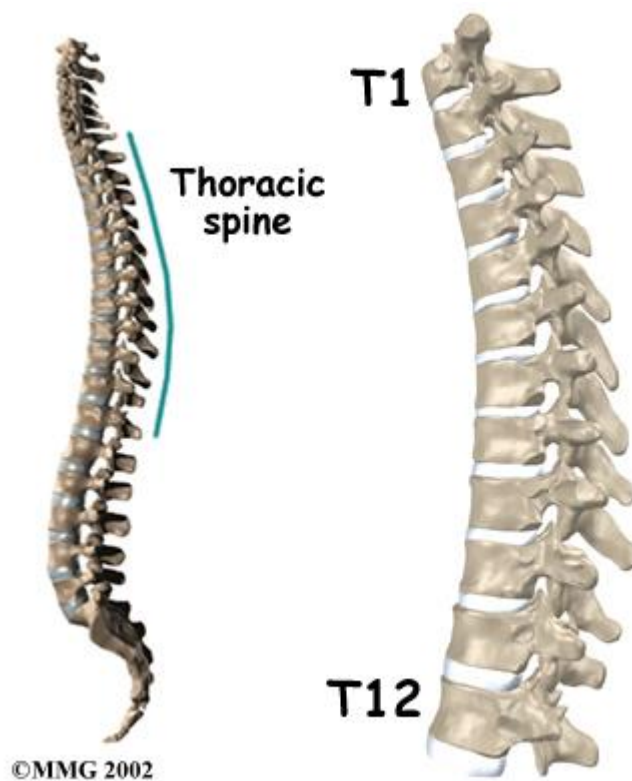
**Function of thoracic spine:-** the main function of the thoracic spine (mid back) is to hold the ribcage and to

protect to heart and lungs. These twelve thoracic vertebrae are numbered T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub>----. Thoracic spine perform limited range of motion.

**Thoracic spinal cord injuries:-**

- T<sub>1</sub> up to T<sub>5</sub> nerves innervate thoracic muscles, upper chest, mid-back and abdominal muscles. These nerves and muscles help to control the ribcage, lungs, diaphragm and muscles which help in breathing.
- T<sub>6</sub> up to T<sub>12</sub> innervate abdominal and back muscles.

**Human Thoracic spine**



**(b) Lumbar spine:-**

**Definition: -** it is part of the spine comprised of five vertebrae (L<sub>1</sub> –L<sub>5</sub>) that extend from the lower thoracic spine (chest) to the sacrum (bottom of spine).

The vertebral bodies are stacked on top of each other with a cartilaginous disk in between two successive vertebrae.

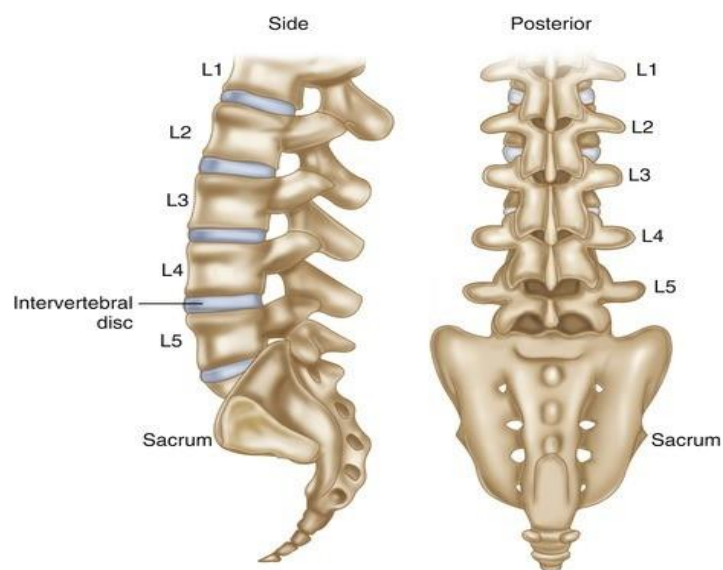
**Function of lumbar spine:** - the lumbar vertebrae are the largest in size among all vertebrae and carry most of the body's weight.

This region allows more range of motion than the thoracic spine but less range of motion than the cervical spine. Lumbar spine plays a significant role in flexion and extension moments but limited rotation moment.

**Lumbar spine injuries:-** vertebrae help to protect the spinal cord and spinal nerves but sometime when the vertebrae are fractured or dislocated, bone shards can damage or pinched the spinal nerves or spinal cord .

These fractures and dislocation are most often the result of traumatic force such as falling from height, gun shots or physical blows being applied to the spine.

### Human lumbar spine



**Q4. Write the differences between male and female pelvis.**

**Difference female pelvis and male pelvis:-**

**Definition:-** pelvis is the lower part of the torso. It is located between the abdomen and the legs. This area provides support for the intestines and also contains the urinary bladder as well as reproductive organs (gonads).

**The difference between the female pelvis and male pelvis:-**

The female pelvis and male pelvis may be differentiated by the following main points.

<b>Female pelvis</b>	<b>Male pelvis</b>
<ul style="list-style-type: none"><li>● Female pelvis is wider and larger because it is adapted for delivery (child birth)</li><li>● The ischial tuberosities of females are also farther apart which increase the size of the pelvis outlet</li><li>● The angle of the female pubic arch is wide and round</li><li>● Female pelvis is usually is more</li></ul>	<ul style="list-style-type: none"><li>● It is thicker and heavier, well adapted for support of the male's heavier physical build and stronger heavy muscles.</li><li>● The ischial tuberosities of the female are closed to each other.</li><li>● The male sacrum bone (pelvis bone) is taller and narrower.</li><li>● The male pelvis bones are typically smaller and narrower.</li></ul>

<p>delicate in nature and wider in range.</p> <ul style="list-style-type: none"> <li>• Female pelvis has larger and wider rounded pelvic inlet.</li> <li>• In females the subpubic angle is greater than 80 degrees.</li> <li>• The pelvic aperture in female is wide oval and rounded.</li> </ul>	<ul style="list-style-type: none"> <li>• Subpubic angle in males is less than 70 degree</li> <li>• Male pelvis has the V-shaped pubic arch which is approximately less than 70 degree.</li> <li>• The pelvic in male is heart shaped and narrow.</li> <li>• The male pelvis is more robust narrower and taller.</li> </ul>
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**Q5. Write a note on formation of Common bile duct (CBD) also name the Arteries of upper leg.**

Answer:

**a) Formation of common bile duct (CBD):-**

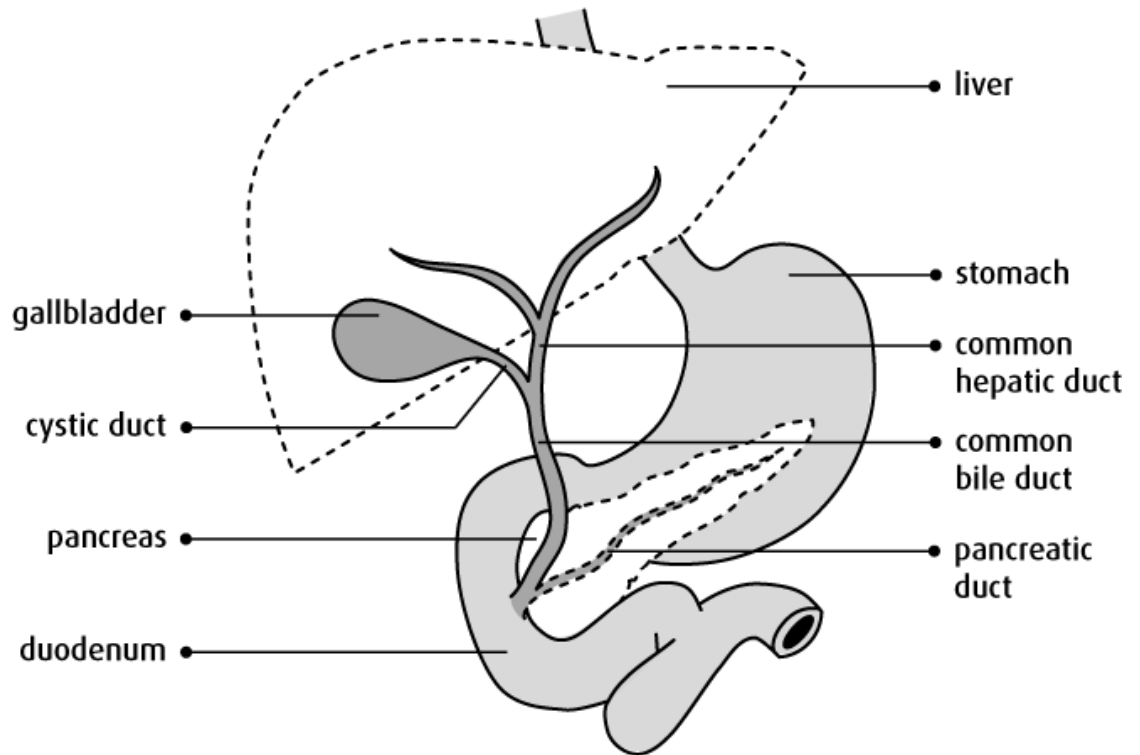
The common bile duct is a small, tubular structure formed where the common hepatic duct from the liver and the cystic duct join.

Its physiological role of the CBD is to carry bile from the gall bladder and empty it to the upper part of the small intestine known as duodenum.

In adult human being, the length of CBD is 55-150mm with a diameter ranges between 4-14 mm for males, while in adult females the length of CBD is between 50 - 95 mm with diameter range between 4- 8 mm.

## common bile duct

### Location of the Bile and Pancreatic Ducts



#### b) Names of arteries of upper leg:-

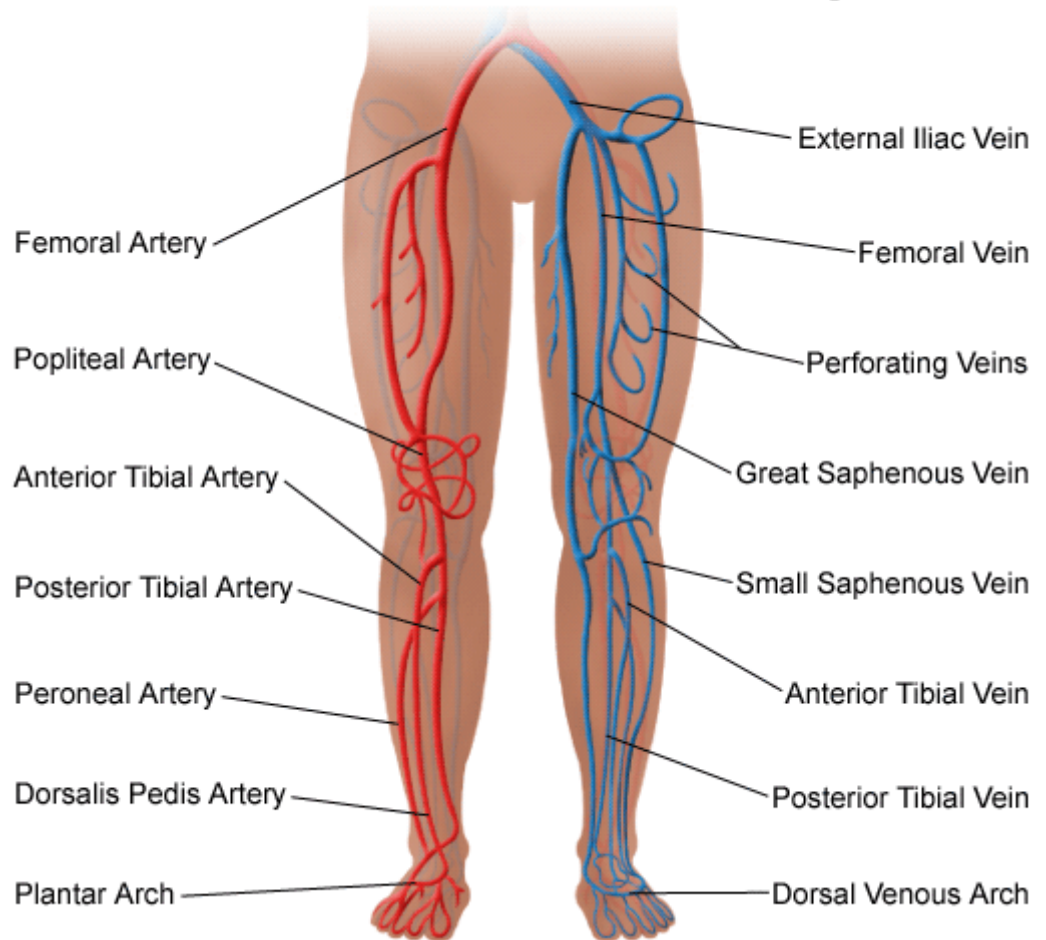
The names of the important arteries of upper leg are the following

- 1) Right common iliac artery.
- 2) Left common iliac artery.
- 3) Right external iliac artery.
- 4) Left external iliac artery.
- 5) Right internal iliac artery.
- 6) Left internal iliac artery.
- 7) Right superficial femoral artery.
- 8) Left superficial femoral artery.
- 9) Right popliteal artery.
- 10) Left popliteal artery.
- 11) Left deep femoral artery



## Arteries of upper leg

### Arterial and Venous Circulation of the Legs



**The End**