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### **Assignment**

#### Answer number 1

*Vasculature is the function of blood vessels to transport nutrients to organs/ tissues and transport wastes away from tissue/blood . A primary purpose and significance role of vasculature is its participation in oxygenating the body .*

*The importance of immune system is that it helps fight foreign substances called antigens . When the body senses these antigens , the immune system works to recognize the antigen and get rid of it.*

*Circulating T cells contact blood vessels either when they extravagate across the walls of micro vessels into inflamed tissues or when they enter into the walls of larger vessels in inflammatory diseases such as atherosclerosis. The blood vessel wall is largely composed of three cell types: endothelial cells lining the entire vascular tree, pericytes supporting the endothelium of micro vessels and smooth muscle cells forming the bulk of large vessel walls. Each of these cell types interacts with and alters the behavior of infiltrating T cells in different ways, making these cells active participants in the processes of immune-mediated inflammation.*

*The coronavirus pandemic has turned the world's attention to the immune system, the body's defense force against disease-causing bacteria, viruses and other organisms that we touch, ingest and inhale every day.*

*\* Until a vaccine is available, our immune systems will need to adapt unaided to COVID-19.*

*\* The immune system is the body's multi-level defense network against potentially harmful bacteria, viruses and other organisms.*

*\* A healthy lifestyle helps one's immune system to be in the best shape possible to tackle pathogens, but it's better to stop them entering the body in the first place.*

*Think of the immune system as the body's personal army working from the cellular to macro level. Each cell, molecule, tissue and organ in this army plays a vital role in warding off invading pathogens, and also helps guard against internal threats like cancer.*

*The system has two types of response: innate and adaptive.*

*The body's natural barriers against disease-causing intruders – for example, our skin, the mucous and hairs in our nose, and the acid in our stomachs – are part of our innate immune systems.*

*Adaptive immunity develops over a lifetime of contact with pathogens and vaccines, preparations which help our immune systems to distinguish friend from foe.*

*Vaccination safely teaches our adaptive immune systems to repel a wide range of diseases, and thus protect ourselves and others.*

*There is currently no vaccine for coronavirus, and we may not see one for 18 months or longer. So, for now, our immune systems must adapt unaided to this potentially deadly threat. How to help your immune system*

*A healthy lifestyle – not smoking, drinking little or no alcohol, sleeping well, eating a balanced diet, taking regular moderate exercise and reducing stress – helps our immune systems to be in the best shape possible to tackle pathogens.*

### Answer number 2

*The sub sartorial canal (also known as adductor canal or hunter canal) is a muscular tunnel in the thigh. It commence at the inferior end of the femoral triangle and terminate at the adductor hiatus. It is bordered by muscular structures;*

*Anterior: sartorius*

*Lateral: vastus medialis*

*Posterior: adductor longus and adductor magnus*

*The apex of the adductor canal is marked by the adductor hiatus, a gap between the adductor and hamstring attachment of the adductor magnus. It is covered in by a strong aponeurosis, the anteromedial intermuscular septum (subsartorial fascia) which extends from the vastus medialis across the femoral vessels to the adductor longus and adductor magnus, lying on the aponeurosis is the sartorius (tailor's muscle). The subsartorial canal can also be important th the lower limbs clinically when used to provide sensory anaesthesia for procedures involving the distal thigh and femur, knee and lower leg on the medial side. The sartorius and femoral artery are used as anatomical landmark to locate the saphenous nerve.*

*The canal contains the femoral artery, femoral vein and branches of the femoral nerve (specifically the saphenous nerve and the nerve to the vastus medialis). The femoral artery with its vein and saphenous nerve enters the canal through the superior foramen. Then the saphenous nerve and artery and vein of genus descendants exit through the anterior foramen, piercing the vasto adductor intermuscular septum.*

### Answer number 3

#### EXTRAOCULAR MUSCLES

*Extraocular muscles (also known as extrinsic muscles of eyeball, extraocular muscles).*

*Latin word; muscular external, bulbi oculi .are set of seven muscles located within each orbit and connected with the eyes. six muscle control the movement of the eye while one controls the eyelid elevation. The six extraocular muscles controlling eye movements include four rectus muscle, superior rectus, inferior rectus, medial rectus, lateral rectus and two oblique muscle, superior oblique and inferior oblique, then the seventh muscle is the levator palpebrae superiors.*

*The nerve supply are provided by the cranial nerve;*

- 1. Oculomotor nerve*
- 2. Trochlear nerve*
- 3. Abducens nerve*

*The oculomotor nerve supplies five extraocular muscles, three out of the four rectus muscles (superior, inferior, medial) ,inferior oblique muscle, and levator palpable superioris muscle. The trochlear nerve innervate only the superior oblique, while the abducens nerve supplies the lateral rectusmuscles.*

#### INTRAOCULAR MUSCLES

*The intraocular muscles are responsible for the pupil accommodation and reaction to light, and the protractor and retractor of the eyelids. Deficit in the muscle or the nerves innervating these muscles can result in functional impairment of the muscles. The intraocular muscles include; ( ciliary muscle, the sphincter pupillae, and the dilatory pupillae). The ciliary muscle is a smooth muscles ring that controls accommodation by altering the shape of the lens as well as control the flow of aqueous humor into schlemmer's canal. The ciliary muscle is attached th the zonular fibres which suspend the lens upon contraction of the ciliary muscle, the tension of the lens is lessened which causes it to adopt a more spherical shape to focus on near objects. Relaxation of the ciliary muscle has the opposite effect, optimizing distant focus.*

*The sphincter pupillae and dilatory pupillae are also composed of smooth muscles. The sphincter pupillae encircles the pupil and is responsible for the constriction of its diameter, while the dilatory muscles is arranged radially and increases the papillary diameter.*

