**Final-Term Assignment**

**Course Title: Human Physiology I**

**DT plus Rad 1st semester**

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**PROGRAM: MLT**

**Marks: 50**

**Note:**

* **Attempt all questions, all questions carry equal marks.**
* **Answer Briefly and to the point, avoid un-necessary details**

**Q1: What is pituitary gland? Explain different lobes and hormones release from form it.**

Pituitary gland, additionally known as hypophysis, ductless gland of the endocrine machine that secretes hormones without delay into the bloodstream. The term hypophysis (from the Greek for “lying under”)—another title for the pituitary—refers to the gland’s function on the underside of the brain. The pituitary gland is referred to as the “master gland” due to the fact its hormones alter different necessary endocrine glands—including the adrenal, thyroid, and reproductive glands (e.g., ovaries and testes)—and in some instances have direct regulatory consequences in fundamental tissues, such as these of the musculoskeletal system.

**1. Anterior lobe**:

The anterior lobe of your pituitary gland is made up of numerous exclusive sorts of cells that produce and launch unique kinds of hormones, including:  
  
**Growth hormone**. Growth hormone regulates increase and bodily development. It can stimulate increase in nearly all of your tissues. Its primary goals are bones and muscles.

**Thyroid-stimulating hormone**. This hormone prompts your thyroid to launch thyroid hormones. Your thyroid gland and the hormones it produces are necessary for metabolism.

**Adrenocorticotropic hormone**. This hormone stimulates your adrenal glands to produce cortisol and different hormones.

**Follicle-stimulating hormone**. Follicle-stimulating hormone is worried with estrogen secretion and the growth of egg cells in women. It’s additionally vital for sperm cell manufacturing in men.

**Luteinizing hormone**. Luteinizing hormone is concerned in the manufacturing of estrogen in ladies and testosterone in men.  
Prolactin. Prolactin helps women who are breastfeeding produce milk.

**Endorphins**. Endorphins have pain-relieving properties and are thought to be linked to the “pleasure centers” of the brain.  
Enkephalins. Enkephalins are intently associated to endorphins and have comparable pain-relieving effects.  
**Beta-melanocyte-stimulating hormone.** This hormone helps to stimulate accelerated pigmentation of your pores and skin in response to exposure to ultraviolet radiation.

**2. Posterior lobe:**

The posterior lobe of the pituitary gland additionally secretes hormones. These hormones are normally produced in your hypothalamus and saved in the posterior lobe till they’re released.  
  
Hormones saved in the posterior lobe include:  
  
**Vasopressin**. This is additionally known as antidiuretic hormone. It helps your physique preserve water and stop dehydration.

**Oxytocin.** This hormone stimulates the launch of breast milk. It additionally stimulates contractions of the uterus for the duration of labor

**3. Intermediate:**

The intermediate lobe synthesizes and secretes the following important endocrine hormone:

* [**Melanocyte–stimulating hormone**](https://en.wikipedia.org/wiki/Melanocyte-stimulating_hormone)**(MSH)**. This is also produced in the anterior lobe. When produced in the intermediate lobe, MSHs are sometimes called "intermedins"

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**Q2: Write a difference between Appendicular and Axial skeleton.**

**The appendicular skeleton** is composed of the bones of the upper limbs (which characteristic to hold close and manipulate objects) and the decrease limbs (which allow locomotion). It additionally consists of the pectoral girdle, or shoulder girdle, that attaches the top limbs to the body, and the pelvic girdle that attaches the decrease limbs to the body  
  
**The axial skeleton** is the section of the skeleton that consists of the bones of the head and trunk of a vertebrate. In the human skeleton, it consists of 86 bones and is composed of six parts; the cranium (22 bones), the ossicles of the centre ear, the hyoid bone, the rib cage, sternum and the vertebral column

**Q3: What is Muscular tissue? Explain different Types of muscles.**

Muscle tissue is a smooth tissue that composes muscle tissues in animal bodies, and offers rise to muscles' potential to contract. This is hostile to different aspects or tissues in muscle such as tendons or perimysium. It is shaped for the duration of embryonic improvement thru a system regarded as myogenesis

**Muscle Types**  
In the body, there are three sorts of muscle: skeletal (striated), smooth, and cardiac.  
  
**Skeletal Muscle**  
Skeletal muscle, connected to bones, is accountable for skeletal movements. The peripheral component of the central apprehensive system (CNS) controls the skeletal muscles. Thus, these muscle tissues are beneath conscious, or voluntary, control. The primary unit is the muscle fiber with many nuclei. These muscle fibres are striated (having transverse streaks) and every acts independently of neighbouring muscle fibres.  
  
**Smooth Muscle**  
Smooth muscle, observed in the partitions of the hole inner organs such as blood vessels, the gastrointestinal tract, bladder, and uterus, is beneath manage of the autonomic anxious system. Smooth muscle can't be managed consciously and hence acts involuntarily. The non-striated (smooth) muscle telephone is spindle-shaped and has one central nucleus. Smooth muscle contracts slowly and rhythmically.

**Cardiac Muscle**  
Cardiac muscle, observed in the partitions of the heart, is additionally below manipulate of the autonomic anxious system. The cardiac muscle cell has one central nucleus, like smooth muscle, however it additionally is striated, like skeletal muscle. The cardiac muscle cell is rectangular in shape. The contraction of cardiac muscle is involuntary, strong, and rhythmical.

**Q4: Write a note on Cycle of Breathing.**

Active cycle of respiration technique (ACBT) combines special respiration strategies that assist clear mucus from the lungs in three phases. The first segment helps you loosen up your airways. The 2nd segment helps you to get air in the back of mucus and clears mucus. The 0.33 section helps pressure the mucus out of your lungs.

**1. Breathing control**  
Breathing manage helps loosen up the airways. You ought to breathe in via your nostril and out via your mouth with very little effort. Use normal, mild respiration with the decrease chest whilst enjoyable the upper chest and shoulders.  
  
A top way to do this is to area one hand on your belly as you breathe. Remember to breathe gently so you loosen up the airways. By the use of the pursed lip method when respiratory out (pursing your lips like you are kissing someone), you create again stress in the airways that stents the airway open longer. Repeat respiratory manage for six breaths earlier than transferring to chest enlargement exercises.  
  
**2. Chest growth exercises**  
Breathe in deeply. (Some humans use a three-second breath keep to get extra air into smaller airways and at the back of the mucus.) Then breathe out except forcing the air out. This can also be completed with chest clapping or vibrating, observed through any other cycle of respiration control.  
  
**3. Huffing or huff coughing**  
Also known as compelled expiration technique, huff cough at different, managed lengths to cross mucus up to the large airways. This huffing must be repeated till all mucus has been huffed out of the lungs.

**Q5: Write a detail note on Function of Integumentary system.**

**Protection**  
The skin protects the relaxation of the body from the simple factors of nature such as wind, water, and UV sunlight. It acts as a protecting barrier towards water loss, due to the presence of layers of keratin and glycolipids in the stratum corneum. It additionally is the first line of protection in opposition to abrasive exercise due to contact with grit, microbes, or dangerous chemicals. Sweat excreted from sweat glands deters microbes from over-colonizing the pores and skin floor via producing dermicidin, which has antibiotic properties.  
  
**Sensory Function**  
The truth that you can experience an ant crawling on your skin, permitting you to flick it off earlier than it bites, is due to the fact the skin, and specially the hairs projecting from hair follicles in the skin, can feel modifications in the environment. The hair root plexus surrounding the base of the hair follicle senses a disturbance, and then transmits the facts to the central nervous system (brain and spinal cord), which can then reply via activating the skeletal muscle mass of your eyes to see the ant and the skeletal muscle mass of the physique to act in opposition to the ant.  
**Thermoregulation**  
The integumentary machine helps modify physique temperature thru its tight association with the sympathetic nervous system, the division of the nervous system concerned in our fight-or-flight responses. The sympathetic nervous system is always monitoring physique temperature and initiating suitable motor responses. Recall that sweat glands, accent constructions to the skin, secrete water, salt, and different elements to cool the physique when it turns into warm.