**HND 2nd Semester**

**Course Title: Anatomy Instructor: Ahmed Hayat**

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**Final Term Assignment Marks: 50**

***NOTE: Mention your name and roll number on the assignments.***

1. Enlist 5 irregular bones in human body.
2. Name the basic 11 systems in human body.
3. Mention five differences between sympathetic & parasympathetic nervous system
4. Enumerate the 12 cranial nerves.
5. How insulin and glucagon controls blood glucose levels.

**Question 1**

* Maxilla
* Inferior nasal concha
* Zygomatic
* Temporal
* Coccyx

**Question 2**

* Circulatory system
* Respiratory system
* Digestive system
* Excretory system
* Nervous system
* Endocrine system
* Immune system
* Integumentary system
* Skeletal system
* Muscle system
* Reproductive system

**Question 3**

**Sympathetic Nervous system :**

1. Sympathetic nervous system is involved in fight or flight response
2. The sympathetic system prepares the body for any potential danger on a person
3. Sympathetic nervous system has shorter neuron pathway ,hence a faster response time then the normal one
4. Tension in muscle increases and tachycardia occur
5. Pupil is dilated

**Parasympathetic nervous system**

1. Maintain homeostasis and also permits the rest and digest response
2. The parasympathetic nervous system brings our body to calm state
3. Neuron pathway is longer than sympathetic nervous system and hence response time is slower
4. Heart rate is bring back to normal by this system and muscle are relaxed
5. Pupil is constricted

**Question 4**

* the optic nerve : this nerve transmits visual information from retina to brain. Each optic nerve carries fiber from the nerve cells of the retina and through the optic foramen and enters middle cranial fossa.
* occulomotor nerve : this nerve supplies muscles of eyes. Superior division of occulomotor nerve supplies levator palpebrae superioris and superior rectus muscle while inferior division supplies medial rectus, inferior rectus and inferior oblique muscle.
* trochlear nerve : function of this nerve is to move the eye in downward and inward direction.
* trigeminal nerve : this nerve has 3 divisions which innervates forehead and eyes (ophthalmic v1), cheeks (maxillary v2) and lower face and jaw (mandibular v3).
* abducens nerve : this nerve supplies lateral rectus muscle in eye.
* facial nerve : this nerve has 3 branches

1. The motor portion is responsible for facial movements and expression, as well as some muscles deep in the neck.
2. The sensory portion is responsible for registering taste on the anterior two- thirds of the tongue.
3. The autonomic portion monitors and controls moisture of the eyes as well as salivation.

* vestibulocochlear nerve : this nerve is concerned with hearing and equilibrium.
* glossopharyngeal nerve : it is also a mixed nerve. Its sensory part supplies posterior 1/3rd tongue. motor part supplies stylopharyngeus muscle and parasympathetic branch supplies parotid gland
* vagus nerve : it is also a mixed nerve that control number of functions throughout the body.
* Accessory nerve : spinal root of accessory nerve supplies sternocleidomastoid and trapezius muscle while cranial root supplies pharyngeal and laryngeal muscles.
* hypoglossal nerve : this nerve innervated both extrinsic and intrinsic muscles of tongue and contribute in speech and swallowing.
* olfactory nerve : it functions to convey smell sensations from nose to brain. Each of the two olfactory nerves detects smells by means of hair-like receptors in the mucous membrane lining the roof of the nasal cavity.

**Question 5**

**FUNCTIONS OF INSULIN :**

Blood glucose level is regulated by negative feedback system. When food is taken insulin functions to metabolize carbohydrates and store glucose in cells and promotes glycolysis, protein synthesis and synthesis of glycogen. This is done in order to lower the level of blood sugar. If this hormone is produced in excess hypoglycemia is induced and absence of this hormone results in impaired regulation of blood sugar due to which diabetes mellitus occur. Insulin stops gluconeogenesis, glycogenolysis, lipolysis and proteolysis as products of these are sugars which are needed to be controlled.

**FUNCTIONS OF GLUCAGON:**

Glucagon antagonizes the action of insulin as it stimulates glycogenolysis and gluconeogenesis. It basically functions to increase blood sugar level when the person is in fasting condition. It continues to release until blood sugar level is raised to normal level.