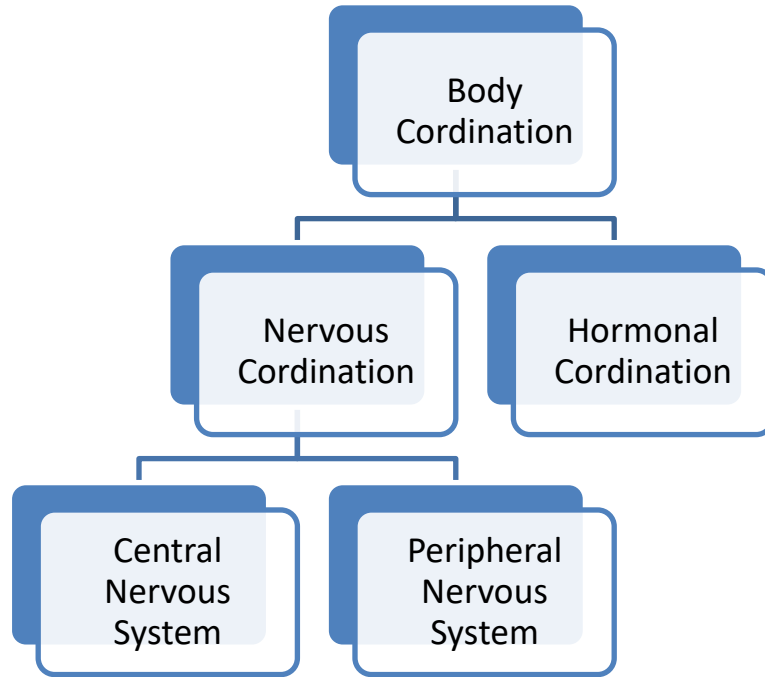
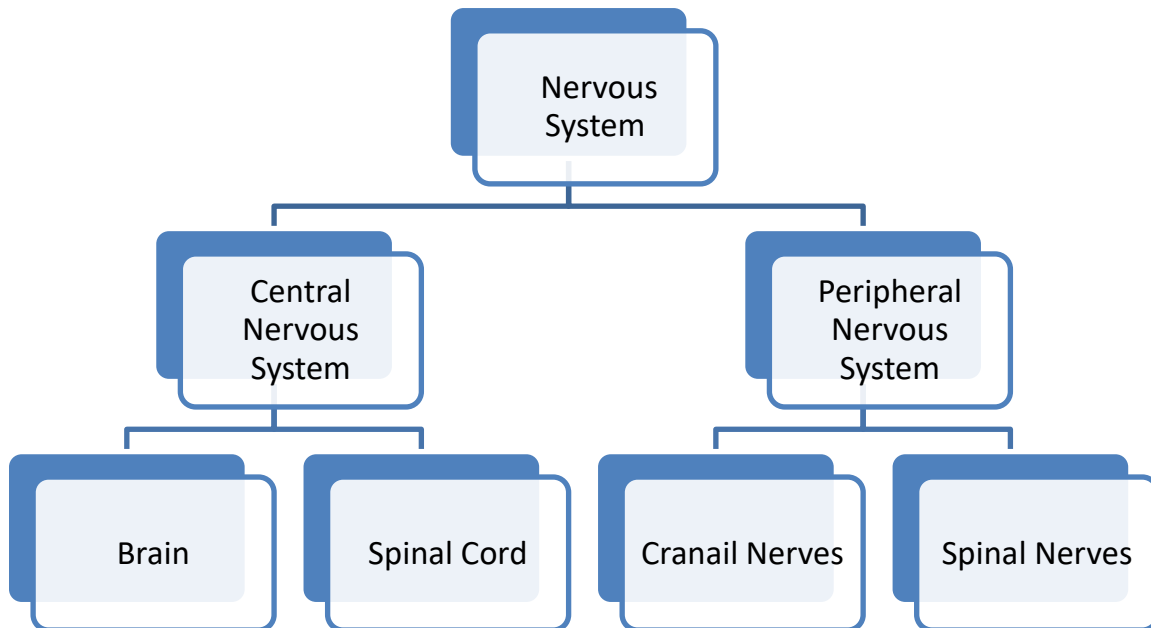


Body Coordination



Looking at the diagram above, we do understand that Body Coordination consist of

- a) Nervous Coordination
- b) Hormonal Coordination



Brain

The brain helps in coordinating body activities. Brain also receives impulses from sensory nerves.

Spinal Cord

The spinal cord carries nervous impulses into and away from the brain.

Peripheral Nervous System

Peripheral Nervous System Consist of:

- Somatic Nervous System (Controlling Voluntarily Action)
- Autonomic Nervous System (Controlling Involuntarily Action)

What is body coordination?

One of the easiest examples can be demonstrated by the example below

Case 1:



Jensis heard a good base Tecno Music played in a club. Hear Ear (Sensory Organ) picks up the message and sends it to the brain. The brain decided that this is the hottest music in the club. Brain sends signal to her leg (Effector). She moves and jiggle with the songs

Case 2:



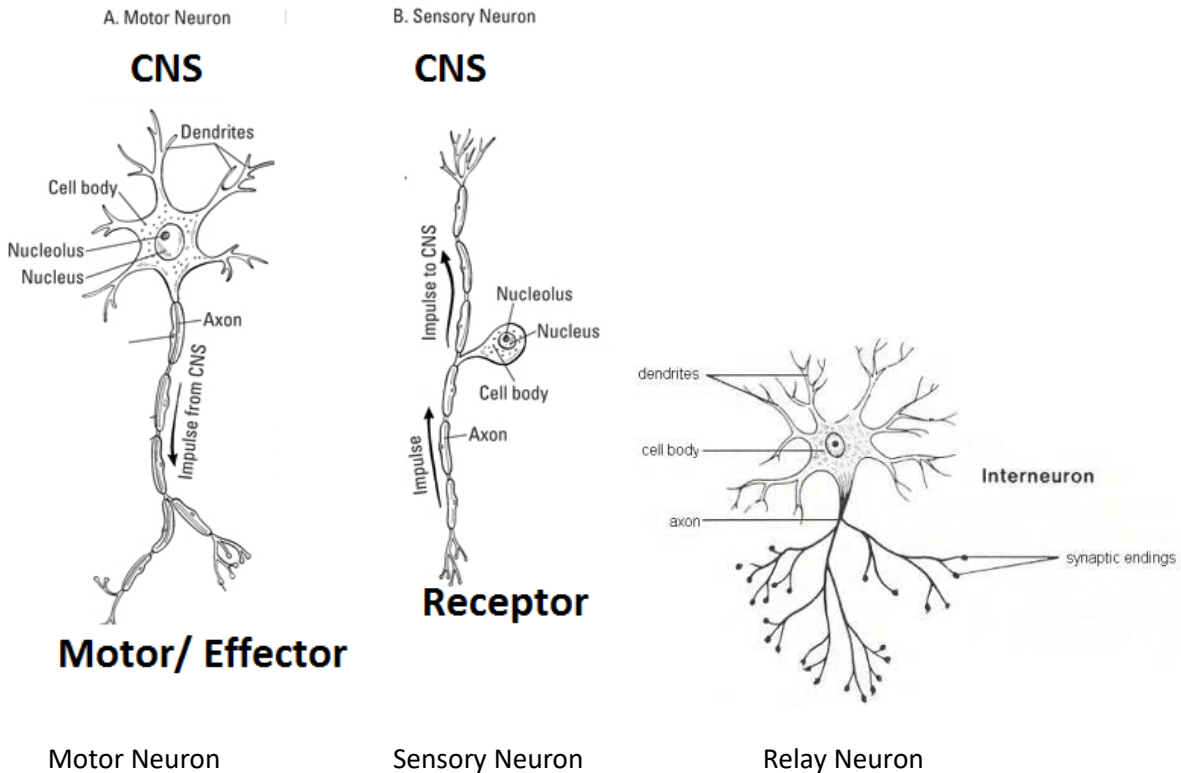
Jeremy saw a flash of light in the jungle (Sensory Organ Eye sense light). The sensory organ sends the information to the brain for interpretation. The brain interprets the information and sends the message to the leg. He walks towards the light.

Neuron in Our Body

Neuron in our body

3 Types of Neuron

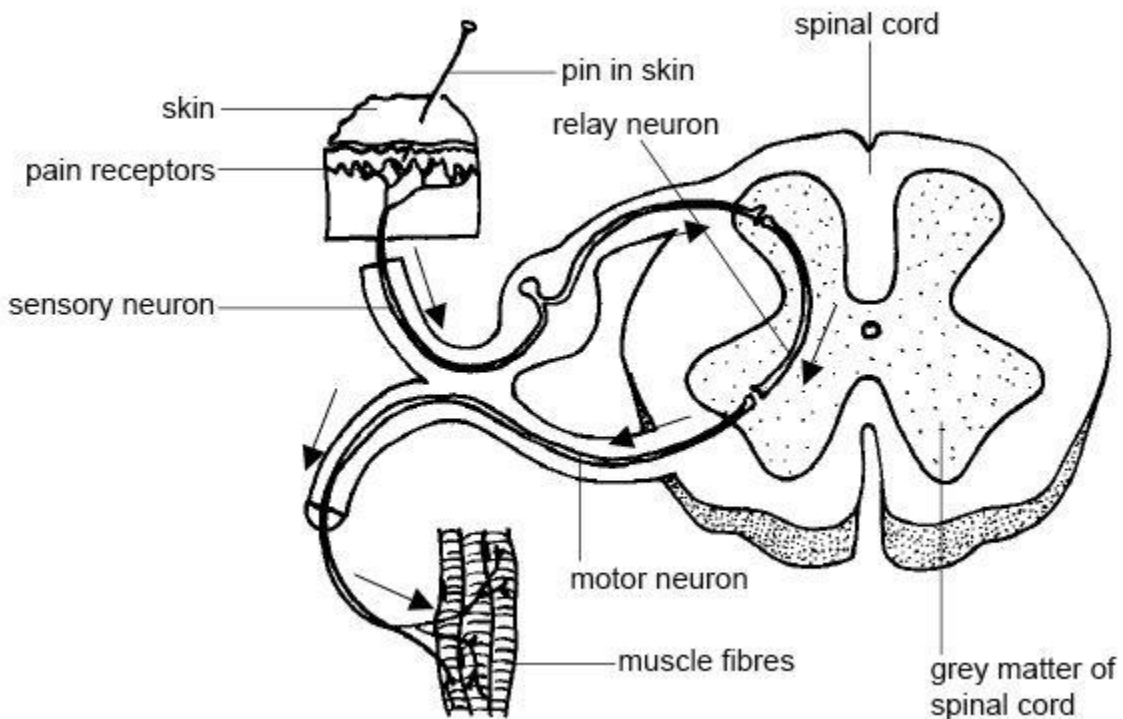
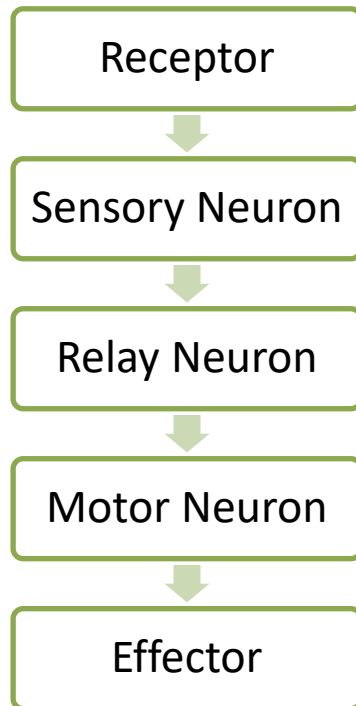
- a) Sensory Neuron
- b) Motor Neuron
- c) Relay Neuron



Sensory Neuron	Motor Neuron	Relay Neuron
<ul style="list-style-type: none"> Present in all parts of body Transmit impulses from receptors to Central Nervous System 	<ul style="list-style-type: none"> Present in all parts of the human body Transmit impulses from Brain to Effectors 	<ul style="list-style-type: none"> Present in Brain and spinal cord Transmits impulses from sensory neuron to motor neuron

Reflex Action

Fast automatic response called as reflex action. Below is the pathway for the reflex arc

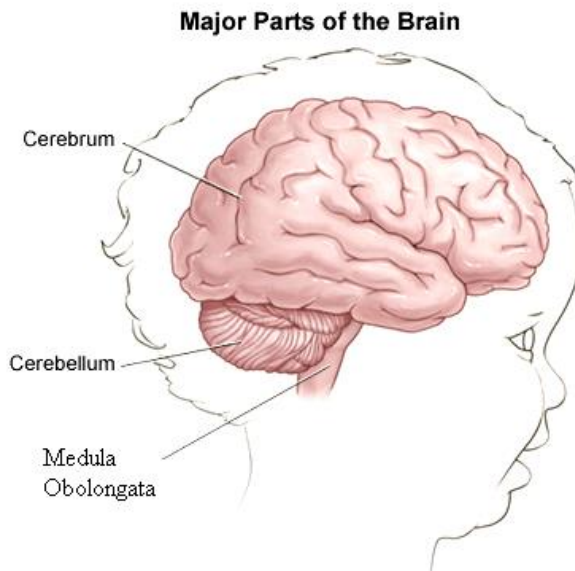


Human Brain

The brain is the most complex organ in the human body. It produces our every thought, action, memory, feeling and experience of the world. This jelly-like mass of tissue, weighing in at **around 1.4 kilograms**, contains a staggering one hundred billion nerve cells, or neurons.

The complexity of the connectivity between these cells is mind-boggling. **Each neuron can make contact with thousands or even tens of thousands of others, via tiny structures called synapses.** Our brains form a million new connections for every second of our lives. The pattern and strength of the connections is constantly changing and no two brains are alike.

It is in these changing connections that memories are stored, habits learned and personalities shaped, by reinforcing certain patterns of brain activity, and losing others.

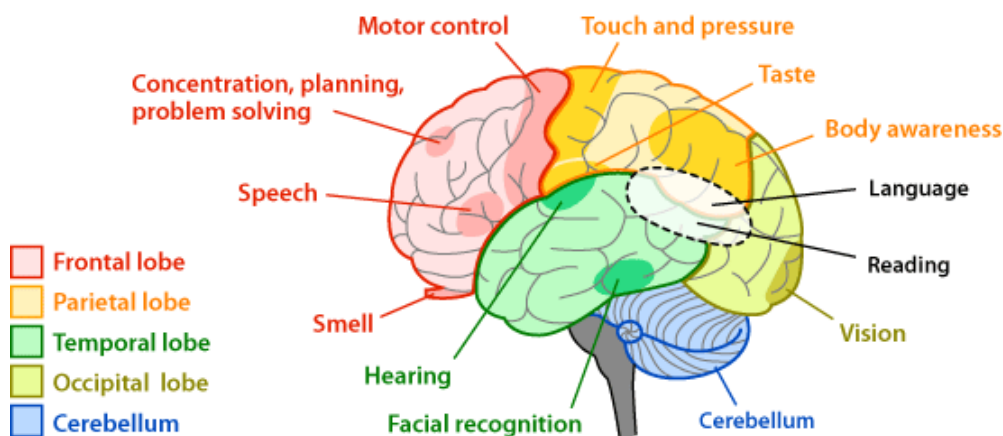
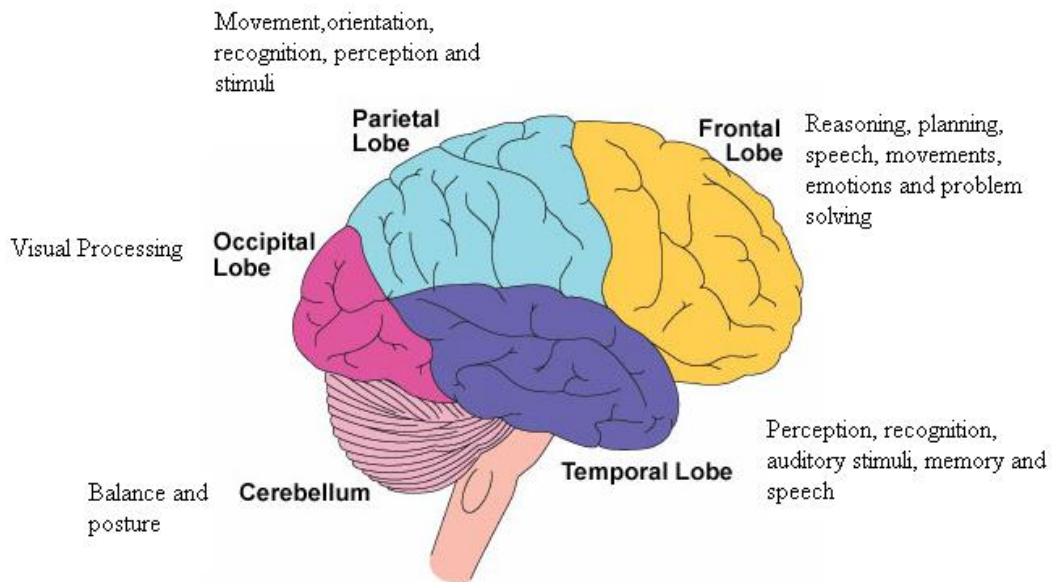


Cerebrum <ul style="list-style-type: none">- Outer part is grey matter- Inner part is white matter.- Two hemisphere, the right hemisphere controls the left of the body while the right side control the right of the body
Cerebellum <ul style="list-style-type: none">- Contains same grey and white matter as in cerebrum
Medulla Oblongata

Parts of Brain	Function
Cerebrum	Muscular activities, memory, Reasoning, Learning, speech
Cerebellum	Maintains balance and posture
Medulla Oblongata	Controls involuntary actions such as heart beats and peristalsis

What is the difference between a voluntary actions and involuntary actions? Demonstrate below:-

Voluntary Actions	Involuntary Actions
Example of voluntary actions are a) Reading b) Talking c) Eating d) Running	Example of involuntary actions are a) Heart Beats b) Peristalsis c) Blinking of Eye
We are aware of the actions	We are unaware of the actions



Question:

1. What is body coordination?
2. Name two systems which control the body coordination?
3. State one body function controlled by the nervous system?
4. State one body function controlled by the endocrine system?
5. Where can you find neuron?
6. What is the function of sensory neuron?
7. What is the sensory neuron located on the skin?
8. Describe the path flow on a reflex action when James accidentally touch something hot?
9. Describe what is voluntary action?
10. Describe what is involuntary action?
11. What is Peripheral Nervous System?
12. What are the functions of Cerebellum?
13. What are the functions of Cerebrum?
14. What are the functions of Medulla Oblongata?
15. What is the function of Cell Body, in sensory neuron?
16. What are the functions of Dendron?
17. What are the functions of Axon?

Types of Drugs	Health Problem
Stimulants	
Depressants	
Antidepressants	
Hallucinogens	
Inhalants	

Questions

What are Proprioceptors?

.....

Where can you find Proprioceptors?

.....

What is the importance of Proprioceptors?

.....



The man above walks on the rope. Which receptors allows him to walk with balance on the rope ?

.....

What is the function of Cerebrum?

.....

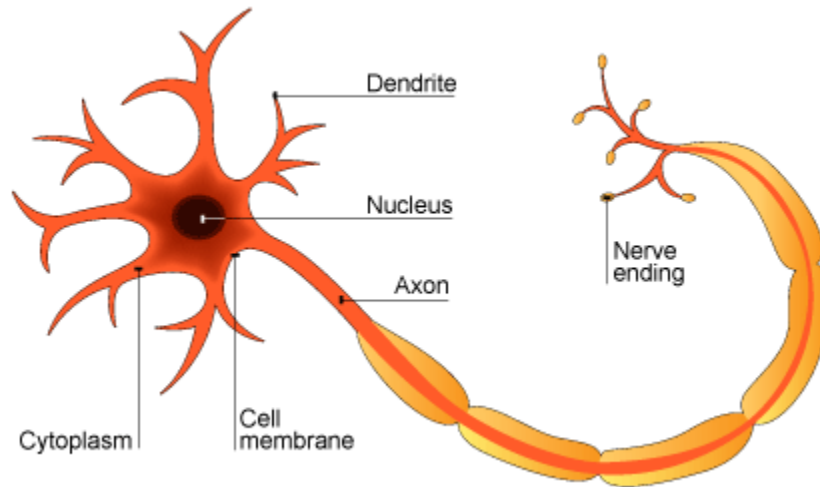
What is the function of Cerebellum?

.....

What is the function of Medulla Oblongata

.....

Sensory Neuron



What is the function of Axon?

.....

What is the function of Nucleus?

.....

What is the function of Cell membrane?

.....

State the differences between Voluntary and Involuntary action

Voluntary Action	Characteristics	Involuntary Action
	Control	
	Part of body taking action	
	Speed	
	Awareness	
	Nervous Pathway	

Endocrine System

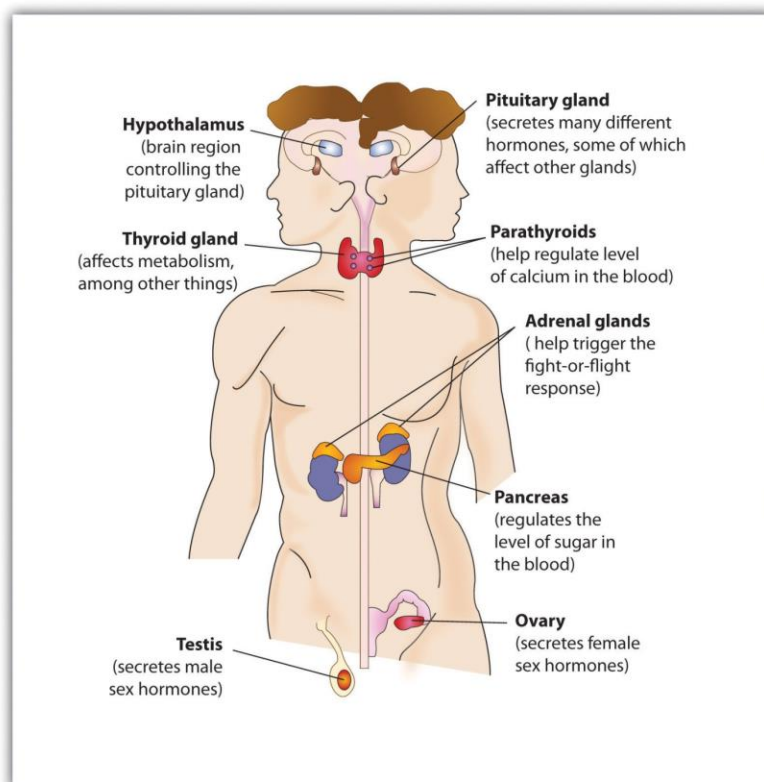
6 Types of Endocrine System

- a) Pituitary Gland
- b) Thyroid Gland
- c) Adrenal Gland
- d) Pancreas
- e) Testis
- f) Ovary

Hormone and the Endocrine Glands

Hormones are the chemical signaling molecules produced by the endocrine glands and secreted directly into the bloodstream. They travel through the blood to distant tissues and organs, where they can bind to specific cell sites called receptors. By binding to receptors, hormones trigger various responses in the tissues containing the receptors.

Hormones are chemical which are secreted by the endocrine glands. The chemical is then release into the bloodstream.



PUSAT TUISYEN SKOR MINDA, BANDAR BARU AYER ITAM

Gland	Hormone	Effects of hormone imbalance	
		Too little hormone secreted	Too much hormone secreted
a. Pituitary	Growth hormone	Growth rate is slower than normal and causes dwarfism.	Growth rate is higher than normal.
b. Thyroid	Thyroxin (need iodine from seaweed, fish or prawn)	<ul style="list-style-type: none"> - has reduced brain growth - stunted physical development - Develop goitre 	<ul style="list-style-type: none"> - The person becomes underweight. - Mental instability. - Higher metabolic rate. - Faster heartbeat.
c. Adrenal	Adrenaline	<ul style="list-style-type: none"> - Weaker muscle. - Unable to act towards stress. 	<ul style="list-style-type: none"> - Higher blood pressure. - Higher glucose level in blood / diabetes.
d. Pancreas	Insulin	Higher glucose level in blood and cause diabetes	<ul style="list-style-type: none"> - Low glucose level in blood. - Cause coma.
e. Testes	Testosterone	<ul style="list-style-type: none"> - Sexual organ fails to develop normally. - Male secondary sexual characteristic not well developed. 	<ul style="list-style-type: none"> - Male secondary sexual characteristics overdeveloped. Highly masculine.
f. Ovaries	Oestrogen	<ul style="list-style-type: none"> - Sexual organs fails to develop normally - Female secondary sexual characteristics not well developed. 	<ul style="list-style-type: none"> - Female secondary sexual characteristics overdeveloped. Highly feminine.
	Progesterone	<ul style="list-style-type: none"> - Irregular menstrual cycle. - Abortion of foetus / miscarriage 	<ul style="list-style-type: none"> - Hasten changes in the uterus wall after ovulation.

Students are required to fill up the space given

Endocrine Gland	Hormone Produce	Lack of Hormone	Excess of Hormone
Thyroid	Thyroxin	Stunted Growth	High metabolic rate
Adrenal			
Pancreas			
Testes			
Ovaries			

Nervous and Hormonal Coordination

Nervous Coordination

- Consist of brain, spinal cord and nerves
- Electrochemical impulses
- Impulse travels fast
- Effects of impulse last short while

Hormonal Coordination

- Consist of endocrine or ductless gland
- Chemical impulses in form of hormones are sent through blood
- Effects large area
- Speed is slow as it carries by blood
- The effects last a longer time

Abuse of Drug

Drug abuse includes

- a) Get "high" -Ecstasy
- b) Feel more daring - Steroid
- c) Give alertness - Steroid
- d) Increase stamina – Steroid

Information about drugs

- a) Barbiturates – Help in sleeping disorder and depressants
- b) Heroin- Depressant
- c) Amphetamines- Stimulants and excitements
- d) Cannabis or ganja- Cause hallucination
- e) Glue, paint and thinner- Hallucination

Alcohol

Effects of consumption of Alcohol

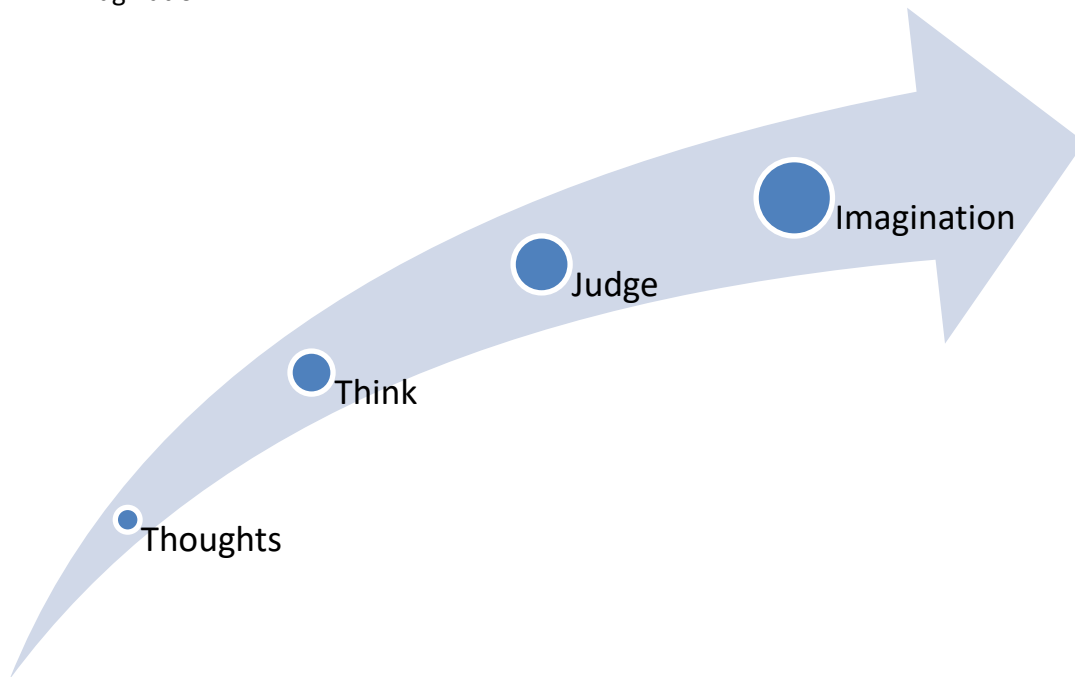
- a) Ease Tension
- b) Slow reaction
- c) Loses body balance
- d) Cirrhosis of liver
- e) Anemia

- f) Dizzy
- g) Numbs in the limb
- h) Addiction

Healthy and Unhealthy Mind

Our Mind consist of

- Thoughts
- Think
- Judge
- Imagination



Factors Affecting the Mind

There are many factors which affects our states of mind

- a) Hormonal Imbalance
- b) Excessive drinking of alcohol
- c) Drug abuse
- d) Mental stress