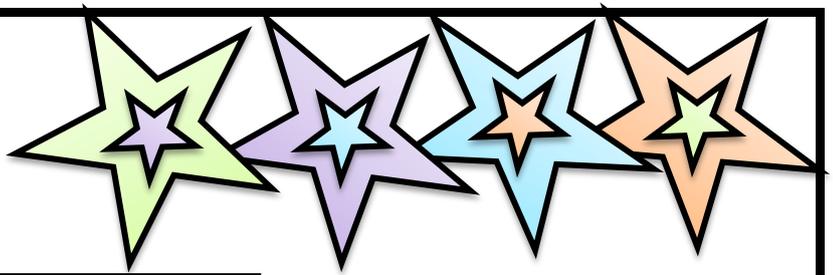


# Biology

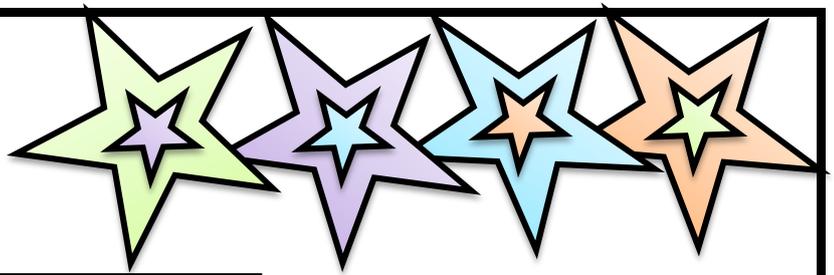


## Excretion in living organisms

### I – write the scientific term :

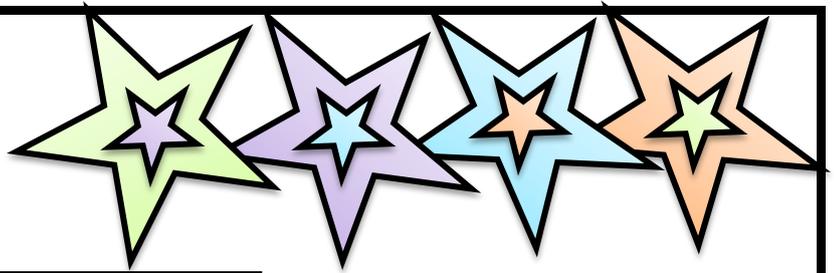
- 1- Membrane lining the abdominal cavity. ( )
- 2- The functional unit of the human kidney. ( )
- 3- Long, thin organs that extend on the sides of the vertebral. Column in lower vertebrates. ( )
- 4- Loss of water from plant in the form of water vapour. ( )
- 5- Organic substance that produce less toxic wastes. ( )
- 6- Granules in the inner layer of skin to give the body its colour. ( )
- 7- Muscle that causes motion of the hair. ( )
- 8- Structure formed by the laying down of a great deal of keratin. ( )
- 9- Blood vessel that comes from the aorta to the kidney. ( )
- 10- Cup shaped structure by which the nephron starts. ( )
- 11- Getting rid of water as water vapor through vegetative parts of plants through cuticle ( )
- 12- The biggest organ in the body. ( )
- 13- Small muscular sac that stores urine. ( )
- 14- Device of guttation. ( )
- 15- The functional unit of the human skin. ( )
- 16- A gland connected to hair follicle end to facilitate its exit. ( )
- 17- Getting rid of waste products by passing through plasma membrane ( )

# Biology



- 18- Biological process to get rid of the harmful metabolic products by passing through plasma membranes. ( )
- 19- Substance produced by the liver cells and excreted through kidneys. ( )
- 20- Drops of water that cast from the tips of leaves in the early morning in the Spring. ( )
- 21- Opening in the cork layer of woody stems to get rid of water vapour ( )
- 22- Part of the kidney that contains the functional unit of the nephrons ( )
- 23- Fine tubule that connects between 1<sup>st</sup> and 2<sup>nd</sup> coiled tube. ( )
- 24- Passage of blood plasma from blood capillaries to coiled tubes through Bowman's capsule. ( )
- 25- Part in the kidney that contains loop of Henle and collecting ducts. ( )
- 26- Fine tube that transfers urine drop by drop from the kidney to the urinary bladder. ( )
- 27- Tubes that transfer urine to the pelvis of the kidney. ( )
- 28- Tube that transfers urine from urinary bladder to the outside. ( )
- 29- Part in the nephron in which filtration happens. ( )

# Biology

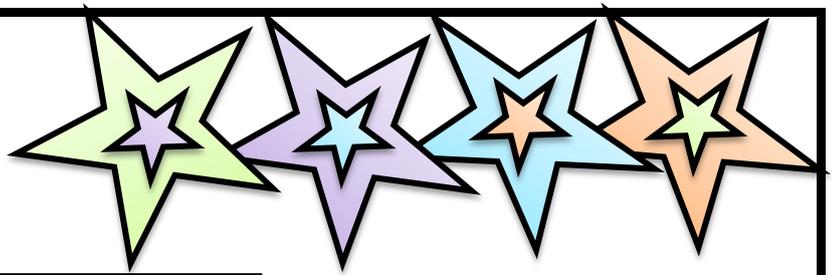


- 30- Organ in which de-amination of excess amino acids happens. ( )
- 31- Opening surrounded by one or more cells in the tips of some leaves to get rid of water droplets. ( )

## II – Choose the right answer :

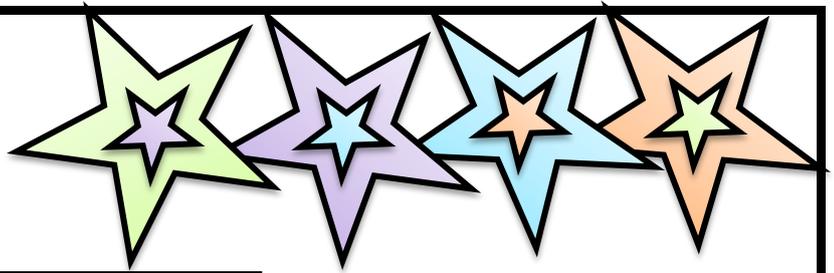
- 1- ..... is not considered as an excreted material.  
( Urine – Sweat – Faeces )
- 2- The ..... converts poisonous materials into non-poisonous.  
( lung – liver – kidney )
- 3- ..... consists of flattened, broad epithelial cells.  
( Epidermis – Dermis – Fatty layer )
- 4- ..... pigment is responsible for skin colour.  
( Hemoglobin – Melanin – Anthocyanin )
- 5- ..... is not excretory substance. ( Water vapor – N<sub>2</sub> – CO<sub>2</sub> )
- 6- ..... is the biggest organ in the body.  
( Skin – Liver – Heart )
- 7- ..... facilitates the exit of hair from the skin.  
( Oil secretion – Water –sweat )
- 8- The length of human kidney is about .....  
( 12cm – 14cm – 16cm )
- 9- The renal artery comes from .....( aorta – vena cava – hepaticvein )
- 10- ..... membrane lines the abdominal cavity.  
( Pleural – Peritoneum – Pia matter )

# Biology



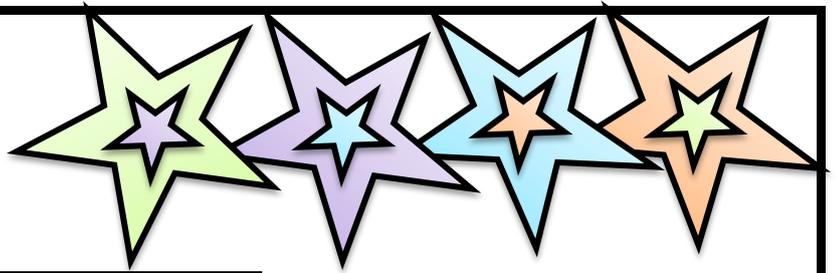
- 11- The functional unit of the kidney is .....  
(nephridium– nephron – ureter )
- 12- The functional unit of the nephron is found in .....  
of the kidney. ( cortex – medulla – pelvis )
- 13- Each collecting duct opens in the .....  
( cortex – pelvis – gall bladder )
- 14- 1.2 - 1.3 liters of blood pass through kidneys every .....  
( hour – minute – day )
- 15- The renal vein leads to .....  
(Posterior vena cava – anterior vena cava – aorta )
- 16- ..... liters of plasma are examined about 560 times / day  
( 3 – 4 – 5 )
- 17- Accumulation of metabolic wastes in the plant cell is .....  
( slow – very slow– fast )
- 18- Metabolism of plant based mainly on .....  
( fats – carbohydrates – proteins )
- 19- ..... is opened constantly day and night.  
(hydathode – stoma – stroma )
- 20- Plant absorbs ..... times more water daily than man  
of equal weight. (17– 16 – 18)
- 21- ..... is a pure water.  
( guttation water – transpiration water – both of them )

# Biology



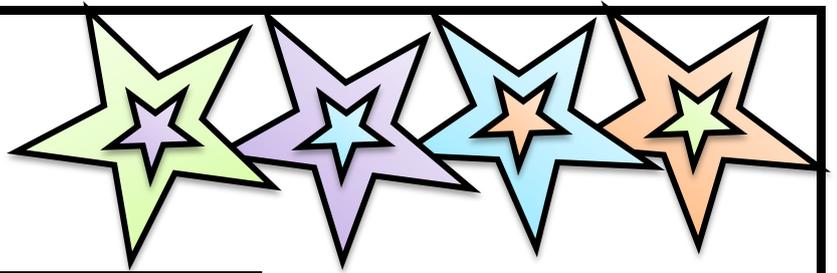
- 22- ..... tissue provide the mesophyll with water  
( Spongy – Phloem – Xylem )
- 23- Plant loses more than 90% of water through .....  
( cuticle – stomata – lenticels )
- 24- Plants lose water through .....  
( stomata – cuticle – lenticels – all the previous )
- 25- The functional unit of the human skin is found in .....  
( epidermis - dermis – both of them )
- 26- The average blood volume passing into kidneys is .....  
( 1 L/min - 2 L/min - 3 L/min - 4 L/min )
- 27- In warm weather, the amount of sweat increases because the blood vessels in the skin ..... ( dilate – shrink – contract – relax )
- 28- The average no. of the human nephron in each kidney is .....  
( million – 3 million – 2 million – 5 million )
- 29- Swollen double membrane cup-shape by which nephron start is called .....  
( Bowman's capsule – loop of Henle – ureter )
- 30- Urea is extracted by .....  
( Urinary bladder – cortex of the kidney – nephron – malpighian corpuscle )
- 31- ..... controls the excretion of urine outside the body.  
(Urinary bladder– Ureter– Urethra – Sphincter muscle around the urinary bladder)
- 32- Plants lose water in a liquid form by .....  
( guttation – transpiration – both of them )

# Biology



- 33- All the following are excretory organs except .....  
( skin – lungs – liver – rectum )
- 34- Urea is produced due to break down of .....  
( fats – proteins – carbohydrates – all of them )
- 35- Volatile substances leaves the body through .....  
( lungs – skin – kidneys liver )
- 36- The functional unit of human skin is .....  
( hair follicle – sweat gland – epidermis )
- 37- Blood passes through kidneys everyday equal .....  
blood volume  
Pumped by the heart. (  $\frac{1}{4}$  -  $\frac{1}{6}$  -  $\frac{1}{2}$  - twice)
- 38- Accumulation of waste products in the human blood causes.  
(Accumulation of urea in the pelvis – block of ureter – poisoning of blood)

# Biology



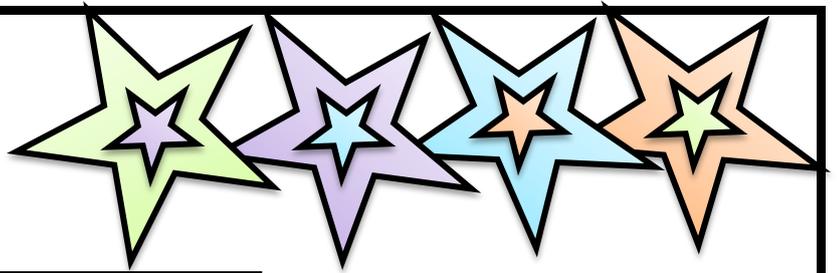
## **III – What happen in each of the following :**

- 1- The liver cannot perform is excretory function.
- 2- If the sebaceous gland at the free end of the hair follicle is absent.
- 3- The urinary bladder contracts.
- 4- One of the human kidneys stops working.
- 5- The temp. Increases around plant
- 6- Wastes of sweat are left on the skin.
- 7-The two kidneys stop working.
- 8- Re absorption does not happen in the nephron tubules
- 9- Growth of plants in soil rich in calcium.

## **Give reasons for:**

- 1- Defecation is not considered as excretion.
- 2- The skin is considered as the biggest body Organ.
- 3- The skin gives the body its color.
- 4- The liver is considered as an excretory organ.
- 5- Sweat gland is surrounded with dense net work blood capillaries.
- 6- Guttation water is not pure.
- 7- Water lost through transpiration is pure.
- 8- The excretory substances in plants are less toxic.
- 9- Excretion in plants does not cause any problem.
- 10- Kidney and skin keep the homeostasis in the body.

# Biology

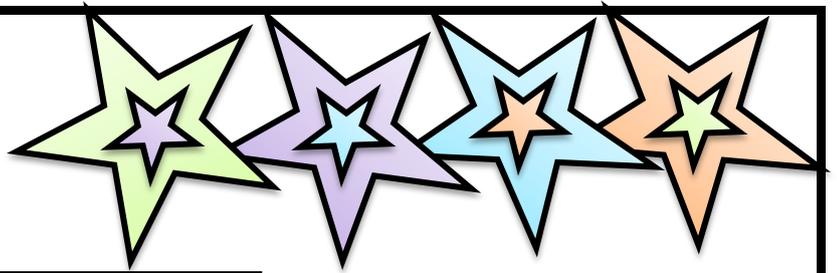


- 11- The importance of purified liquid in the bath of kidney washing machine.
- 12- Getting rid of  $N_2$  is not considered excretion.
- 13- Proteins cannot pass through Bowman's capsule.
- 14- Presence of sphincter muscle at the end of the urinary bladder.
- 15- Liver is considered as excretory organ.
- 16- Human cannot survive without kidneys.
- 17- Waste products do not cause any problem in terrestrial plants.
- 18- Transpiration is vital process for plants.
- 19- Volume of urine and sweat depends on environment temperature.

## V – Write the site and function of :

- 1-pigment cell
- 2-sweat gland
- 3-fat glands
- 4-Bowman's capsule
- 5-Hydathode (water stoma)
- 6-Lenticles

# Biology



## VI – Re-write after correcting underlined words :

- 1- The outer part of human kidney is called Medulla. (cortex)
- 2- 5 liters of blood plasma pass through kidneys to be examined many times every day. (3)
- 3- Kidney washing is needed 2 or 3 times very month. (week)
- 4- Plants get rid of  $CO_2$  resulting from respiration by osmosis. (reusein photosynthesis)
- 5- Plants lose 90% of water through cuticle. (stomata)
- 6- Skin epidermis consist of connective tissue. (epithelial)

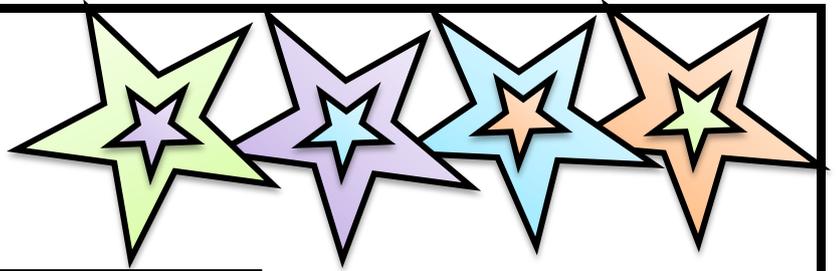
## VII – Explain the role of each of the following in excretion :

- 1- Lungs
- 2- Pelvis
- 3- Ureter
- 4- Skin
- 5- Liver

## VIII – Draw a labeled diagram to show :

- 1- Structure of sweat gland and mention its function.
- 2- Structure of human kidney showing one of its functional unit.
- 3- Human urinary system.
- 4- Human skin.

# Biology



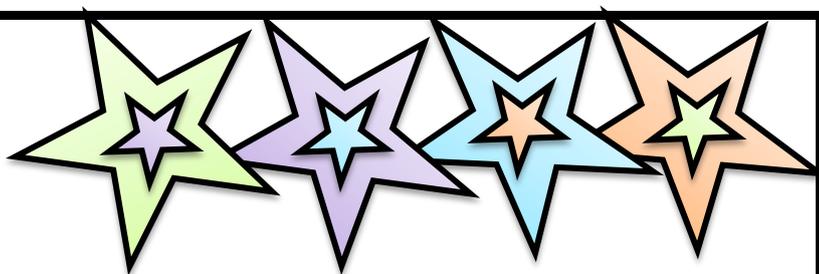
## Chapter 5

### Sensitivity in living organisms

#### \*\* Write the scientific term :

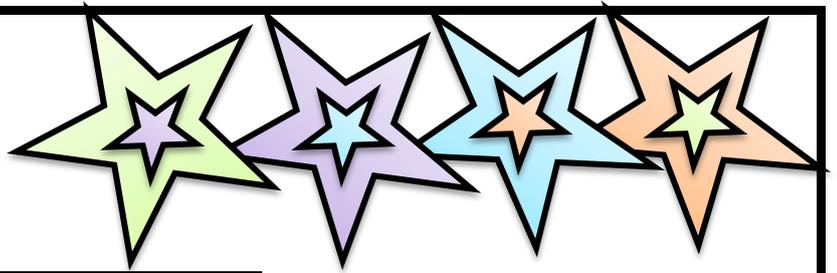
- 1- Nerve cell that carry impulses from receptors to C.N.S  
.....
- 2- The unit of nervous system activity.  
.....
- 3- Nerve cell that transfer impulses from CNS to the effector.  
.....
- 4- System that regulates different involuntary functions.  
.....
- 5- Type of receptors which is stimulated by light.  
.....
- 6- The ability of organisms to recognize external and internal stimuli and respond to them.  
.....
- 7- Nerve that stimulates the adrenal gland to produce epinephrine.  
.....
- 8- Nerve that stimulates the relaxation of the urinary bladder.  
.....
- 9- Reflex action in which the effector organ is skeletal muscle.  
.....

# Biology



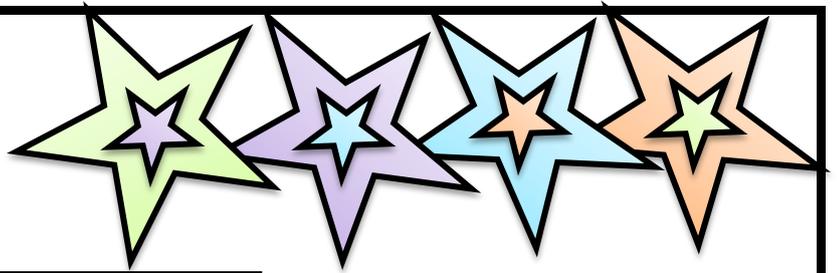
- 10- Reflex action in which the effector organ is involuntary muscle or gland. ....
- 11- Type of nerves that contains sensory and motor never fiber. ....
- 12- Group of nerves which originate from the brain stem and sacral region of spinal cord. ....
- 13- The structural unit of nervous system  
.....
- 14- Part of the brain that connects between medulla oblongata and other brain parts. ....
- 15- Group of nerves originated from the brain. ....
- 16- System that helps the body to face emergency situations.  
.....
- 17- Group or nerves that originate from thoracic and lumbar region of the spinal cord. ....
- 18- Group of nerves that connect the central nervous system with body organs. ....
- 19- The smallest part of the brain that connects between the fore and the hind brain. ....
- 20- Part of skeleton that protects the brain.  
.....

# Biology



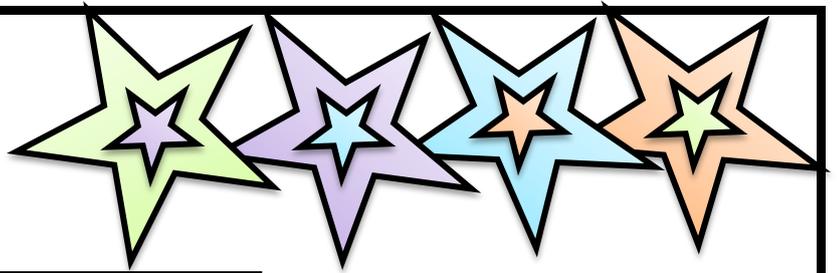
- 21- Centre of coordination of different sensation except smell.  
.....
- 22- Membrane that prevents friction between spinal cord and  
Vertebrae .....
- 23- The main center of reflex action in the spinal cord.  
.....
- 24- 12 pairs of nerves that extend from the brain .  
.....
- 25- Lobe in the brain that centers of memory, thinking and voluntary  
movement. ....
- 26- One of the spinal cord roots that transfers impulses to the spinal cord.  
.....
- 27- The outer layer of the spinal cord.  
.....
- 28- The inner layer of the spinal cord.  
.....
- 29- Part of the brain that contains centre of respiration, coughing,  
and sneezing. ....
- 30- Part of the brain that contains centers of hunger, thirst, and satiety.  
.....
- 31- Lobe of the brain contains skin sensation center.  
.....

# Biology



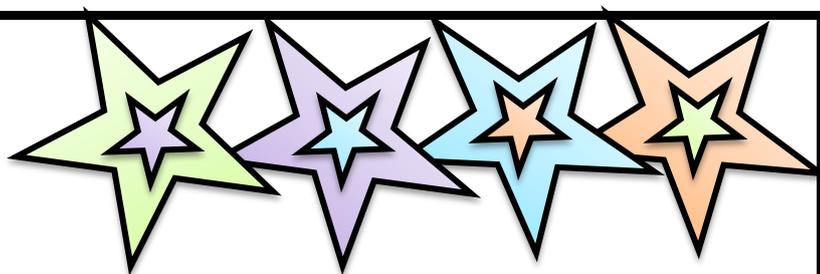
- 32- Lobe of the brain that contains vision center.  
.....
- 33- Lobe of the brain contains centers of taste, smell and hearing.  
.....
- 34- Part of the brain that contains cerebellum, pons varolii, medulla oblongata and 12 cranial nerves. ....
- 35- Group of nerve fibers surrounded with connective tissue.  
.....
- 36- Membrane that surrounds the nerve.  
.....
- 37- Soft membrane that adheres directly to the brain.  
.....
- 38- Transparent fluid that protects the brain from mechanical trauma.  
.....
- 39- Cleft that separates between axon arborizations membrane and dendrite membrane. ....
- 40- Swellings at the end of terminal branches of the axon.  
.....
- 41- Chemical transmitters that transfer nerve impulses across synapses. ....
- 42- Ions required for passage of impulses across synapses.  
.....

# Biology



- 43- Period at which the nerve cell membrane does not respond to any stimulus. ....
- 44- Propagation of action potential along nerve fiber membrane. ....
- 45- Group of nerve bundles surrounded with connective tissue. ....
- 46- Group of cells in the nervous system that have the ability to divide for Support and insulation. ....
- 47- Neurons that convey impulses to the CNS. ....
- 48- Neurons that convey impulses from CNS to effector organs. ....
- 49- Period at which the cell uses energy to retain its physiological properties, to be ready for receiving of new stimuli. ....
- 50- Electro chemical change in the nerve membrane. ....
- 51- The message transmitted through nerves from the sensory organs to CNS or from CNS to effector organs. ....
- 52- Long cytoplasmic strands (extension) of the nerve cell body. ....
- 53- Granules in the neuroplasm which are considered as stored food. ....
- 54- Chemical substance produced by the growing tips to regulate plant growth and elongation. ....

# Biology



55- Structures at the base of Mimosa plant that help it to respond to touch and darkness. ....

56- Curvature or response of plants to external stimuli as light, gravity and water. ....

57- Group of branches at the end of axons. ....

58- Parts of axon which is devoid of membranes. ....

59- Cells that secrete myelin sheath around the axon. ....

60- The outer membrane that covers the axon. ....

61- Short processes which increase the surface area available for receiving nerve impulses. ....

62- One of the brain lobes that can not appear externally. ....

63- Part that represents a link between the nervous system and endocrine glands. ....

64- Perception of internal and external stimuli and responding for them, so organisms maintain their life. ....

65- Chemical substances secreted by growing tips and affected quickly by external factors. ....

66- Group of organs that receive stimuli and send the impulse to the CNS. ....

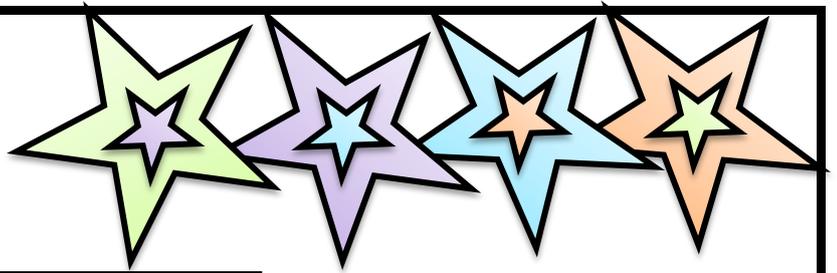
67- Group of cells that support nerve cells, act as connective tissue and repair damaged parts in neurons. ....

68- The hormone which increases blood pressure, heart rate and glucose level in blood. ....

69- White substance that surrounds the axon. ....

70- Inability of the nerve to transfer nerve impulses unless the stimulus is strong enough. ....

# Biology



71- 3 membranes that surround the brain for feeding and protection.  
.....

72- Non-compact transparent membrane that contain fluid to protect and feed the brain.  
.....

73- 2 big lobes in the brain separated by cleft and connected together by nervefibres.  
.....

74- One of the organisms whose sensitivity reaches its highest efficiency and accuracy.  
.....

75- Potential difference of the nerve fibre when it is not stimulated.  
.....

76- Response of plant parts to external stimuli when these factors are exerted on the side with unequal form.  
.....

77- System that gives impulses to most of internal organs.  
.....

78- System that controls metabolic processes through secretion of chemicals Substances(hormones).  
.....

**\*\* Give reasons for :**

1- Reflex action occurs without thinking.  
.....  
.....

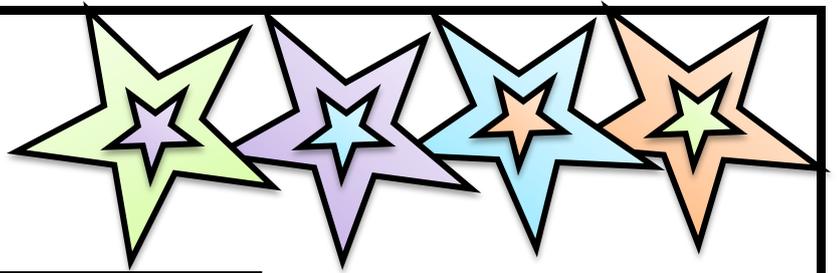
2- Sympathetic system helps the body to face emergency situation.  
.....  
.....

3- Roots are +vegeotropic and-ve phototropic.  
.....  
.....

4- Grey matter is the main site of reflex action in the spinal cord.  
.....  
.....

5- Reflex action is controlled by the spinal cord not the brain.  
.....  
.....

# Biology



6- Damage of medulla oblongata leads to death.

.....

7- Presence of Nissl's granules in the nerve cell body.

.....

8- Transmission of nerve impulses across synapses.

.....

9- Presence of neuroglia (glial cells) in the brain and nerves.

.....

10- Different system and organs act as on unit.

.....

11- Injury of nervous centers can be healed although neurons cannot reproduce.

.....

12- Loss of part of memory in elder persons.

.....

13- Sympathetic system increases sugar level in the blood.

.....

14- Presence of cone and rod cells in the retina.

.....

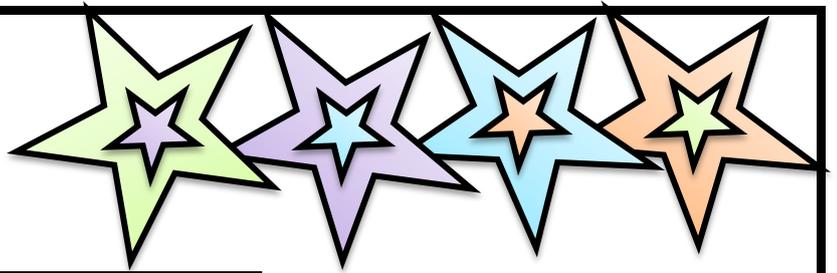
15- Parasympathetic nervous system help the body to relax.

.....

16- Reflex action is the unit of nervous system activity.

.....

# Biology



17- Spinal nerves are mixed nerves.

.....  
.....

18- Each spinal nerve originate from the spinal cord by two roots.

.....  
.....

19- Disturbance in cerebellum causes loss of body balance.

.....  
.....

20-  $\text{Ca}^{++}$  ions play an important role in the transmission of nerve impulses.

.....  
.....

21- Some stimuli do not cause action potential.

.....  
.....

22- The speed of nerve impulse transmission depends on the axon diameter.

.....  
.....

23- Stimulation of nerve fibre membrane obeys all or nothing law.

.....  
.....

24- Many short processes (dendrites) extend from the cell body of the nerve cell.

.....  
.....

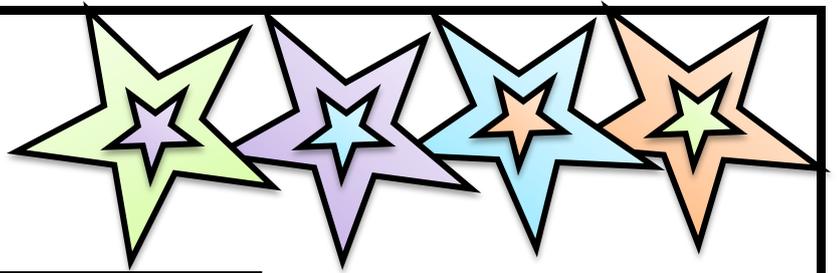
25- Presence of Schwann's cells around the axon.

.....  
.....

26 -ve proteins cannot pass across the nerve membrane.

.....  
.....

# Biology



27- Roots grow downwards towards gravity whatever the direction of seed sowing.

.....  
.....

28- High cons. Of auxins inhibit root growth and accelerate stem growth.

.....  
.....  
.....

29- Petioles (rachis) of Mimosa plant acts as joints.

.....  
.....

30- At rest, the outer membrane of the nerve fiber is +ve charged, while the inner membrane is -ve charged.

.....  
.....

31- Shivering of the body in winter.

.....  
.....

32- Presence of pulvinus at the base of Mimosa petiole (rachis).

.....  
.....

33- Stem is -ve geotropic.

.....  
.....  
.....

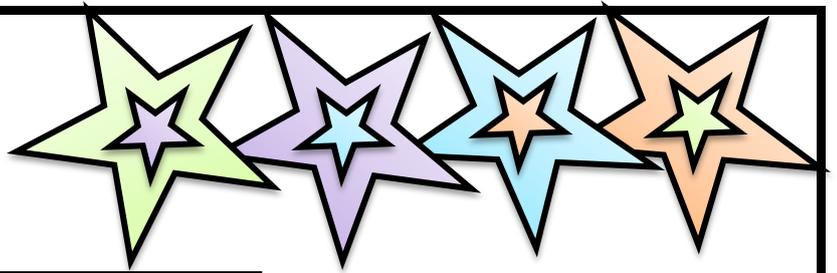
34- Farm plants grow vertically.

.....  
.....

35- Importance of nervous and endocrine control.

.....  
.....

# Biology



36- Reaching of nerve impulses to synaptic knob leads to releasing of impulse transmitter.

.....  
.....

37- Refractory period needs energy.

.....  
.....

**\*\* Re-write after correction the under-lined words :**

1-Neuralgiaacts as epithelial cells.

2-Damage of cerebral hemispheres causes loss of balance.

3-Centre of respiration in the cerebral cortex regulates the rate and depth of respiration.

4-Medulla oblongata contains memory centre.

**\*\* Choose :**

1- The vital function that helps the living organism to adapt with its environment to .....

(Respiration – transport – movement – sensation)

2- The nerve fiber represents .....

(A neuron – dendrite or an axon of a neuron – axon – dendrite)

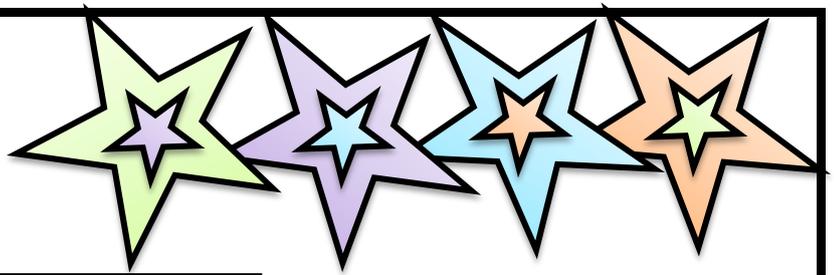
3- All the following glands are affected by parasympathetic system except

..... (Pancreas – adrenal medulla – liver – gastric and salivary)

4- ..... Membrane protects the brain against trauma.

( Pia matter – dura matter – arachnoid – epineurim )

# Biology



5- Myelinated axons (nerve fibre) conduct nerve impulses faster than non Myelinated.....

- a- because myelin is an insulator.
- b- Because myelin is a conductor.
- c- because myelin is only for nutrition.

6- Cone in the retina are considered as .....Receptors.

( chemo – mechano – photo – thermo )

7- ..... Nerve fibres help the glands to contract.

( motor – sensory – mixed )

8- Sensory nerves connect between .....

(Receptors and CNS – effectors and CNS – neurons and neurons)

9- At rest, the conc. Of  $\text{Na}^+$  ions outside the membrane is ..... that of the inner membrane.

( less – more – equal )

10- At rest, the potential difference is .....

( 40 mV - -70 mV - 30 mV - 110 mV )

11- When the nerve fibre is stimulated, the potential diff. is .....

(40 mV – 70 mV – 30 mV – 110 mV)

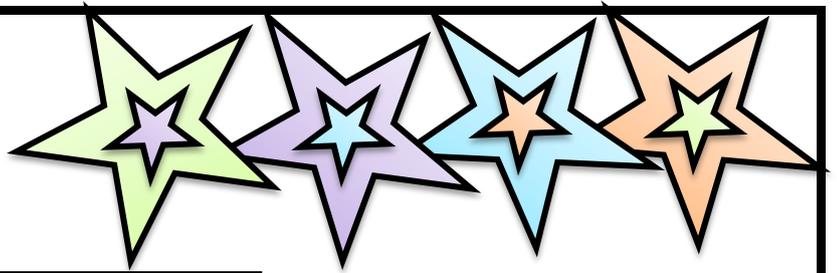
12- State of depolarization and repolarization, needs ..... mV

(40 - -70 - -30 - 110)

13- ..... Causes the relaxation of urinary bladder wall.

(Sympathetic– Para sympathetic – medulla oblongata)

# Biology



14-..... System includes fibres that originate from the thoracic and lumbar Regions of the spinal cord.

( Sympathetic – parasympathetic – both )

15- Centre of vision is found in ..... lobe.

( frontal – occipital – parietal )

16- ..... Represents a link between nervous system and endocrine glands.

(Thalamus – hypothalamus – midbrain)

17- ..... Consists of 2 cerebral hemispheres and cerebral cortex.

( forebrain – mid brain – hind brain )

18- Reflex action consists of two ..... At least.

( neurons – nerve fibres – nerves )

19- Nissl's granules are found in ..... Cells.

( muscle – nerve – skin )

20- Auxin conc. In the plant stem in the side away from light is ..... than side facing light.

(More – less – nil – irregular)

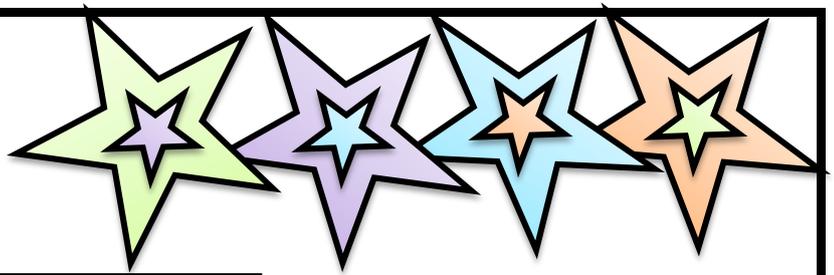
21- The effecting factor in geotropism is .....

(Gravity – temperature – humidity – light )

22- All the following organelles are found in the nerve cell except .....

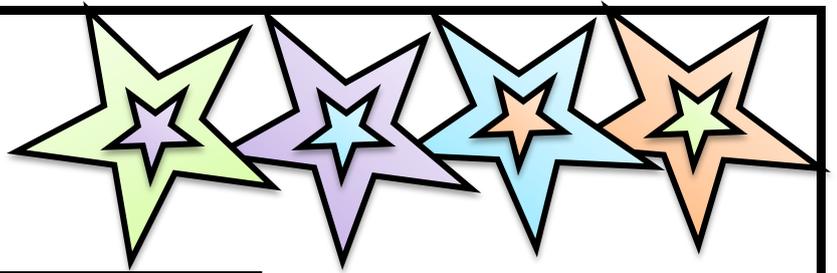
( mitochondria – centrosome – Golgi body – nucleus )

# Biology



- 23- Most of nerve impulses enter the cell body of nerve cell through .....  
( dendrites – cell axon – Schwann's cell – arborization )
- 24- ..... are nerve cells that transfer nerve impulses from CNS  
( Sensory – Motor – Mixed )
- 25- When nerve cell is stimulated at any point, ions inflow at this point.  
( Na – K – Cl – Mg )
- 26- Little amount of K ions flow from the nerve cell during .....  
(Rest – stimulation – polarization – refractory)
- 27- Speed of nerve impulse transmission depends on .....  
(diameter of nerve fibre – presence of acetylcholine – all the previous )
- 28- Passage of ..... Ions into nerve cells causes the rupture of synaptic vesicles.  
( Ca – Na – K – proteins )
- 29- The weight of brain in children is ..... gm. ( 150 – 350 – 1400 )
- 30- ..... Membrane adheres to the brain.  
( Dura matter – Pia matter – Arachnoid)
- 31- Hind brains contains .....  
( cerebellum – thalamus – parietal lobe – all the previous )
- 32- ..... Membrane surrounds each nerve.  
( Neurolemma – Epineurium – Perimysium )
- 33- ..... is covered with parietal and frontal lobe.  
( 5<sup>th</sup> lobe – temporal – thalamus )
- 34- ..... Contains the center of involuntary functions.  
( medulla oblongata – cerebellum – cerebral cortex )

# Biology

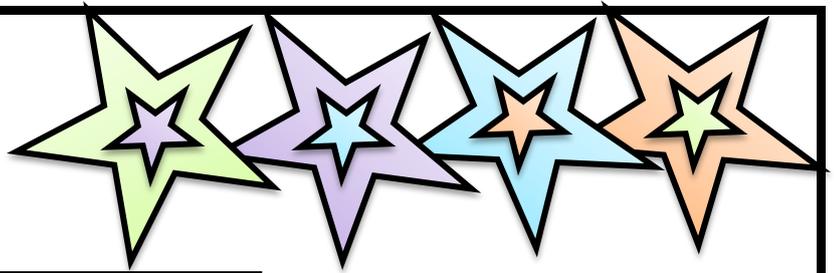


## Answers :-

### I – write the scientific term :

- 1- peritoneum
- 2- nephron
- 3- kidney
- 4- transpiration
- 5- carbohydrates
- 6- melanin granules
- 7- erector muscle
- 8- Horny layer
- 9- renal artery
- 10- Bowman's capsule
- 11- cuticle transpiration
- 12- skin
- 13- urinary bladder
- 14- Hydathode
- 15- sweat gland
- 16- fat(sebaceous)gland
- 17- Excretion
- 18- Excretion
- 19- Urea
- 20- Guttation
- 21- lenticels
- 22- cortex
- 23- loop of Henle
- 24- Filtration
- 25- medulla
- 26- ureters
- 27- collecting duct
- 28- urethra
- 29- Bowman 's capsule
- 30- liver
- 31- hydathodes

# Biology



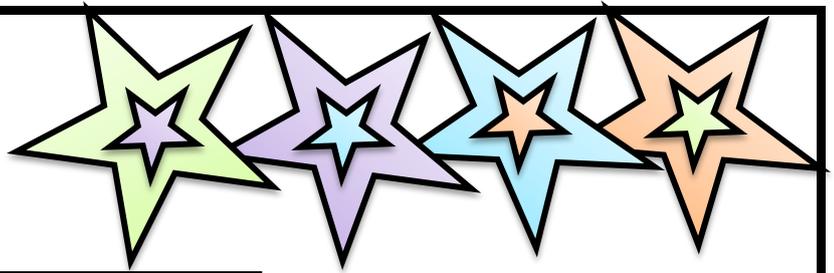
### III-What happen in each of the following :

- 1- The poisonous materials will not be change to non poisonous ,and no de-amination of amino acids to produce urea
- 2- The hair will not be soft and it will be difficult to exit the skin
- 3- The sphincter opens and urine is expelled out through urethra
- 4- The other one enlarges to perform the function of two kidneys
- 5- The transpiration takes place the water vapor decreases the plant temp.
- 6- The will be sticky and give a bad smell, so it should be removed by washing.
- 7- The patient must have a kidney wash ,or accumulation of nitrogenous wastes will cause death .
- 8- It causes loss of water and dehydration the man should drink 170 liters of water to compensate this loss.
- 9- The plants accumulate calcium in some leaves which finally shed.

### Give reasons for:

- 1-Because it does not pass through plasma membrane.
- 2-Because it covers all the body .
- 3-Because it contains pigment cells which contain melanin pigment which gives the skin its color.
- 4-Because it converts poisonous materials to non poisonous ,makes deamination of excess amino acids and produces urea.
- 5-To extract wastes (excess salts water traces of urea) from blood and get rid of them as sweat through sweat duct .
- 6-Bec. Some substances go out with water through hydathodes.
- 7-Because water is lost as water vapor through stomata
- 8-Because the metabolism depends on carbohydrates which their wastes are less toxic than the wastes of proteins

# Biology



9-Because the plant reuses the wastes in other processes as  $\text{CO}_2$  in photosynthesis

, $\text{O}_2$  in respiration and nitrogenous wastes in building of proteins ,plants wastes

are less toxic as the metabolism depend on carbohydrates.....

10-Because they control the ratio of water and mineral salts in the body

11-The concentration of wastes in the patients blood is higher than in the liquid so the wastes pass from the blood to the liquid which filters the blood

12-Bec, it doesn't go out through plasma membranes of cells

13-Due to the large size of the particles.

14-To close the outlet of the bladder till the urine accumulate.

15-Because it converts poisonous material into non poisonous ,deamination of excess amino acids and production of urea.

16-Bec. The accumulation of nitrogenous wastes cause death.

17-Bec. The plant reuses the wastes ,it uses  $\text{CO}_2$  in photosynthesis , $\text{O}_2$  in respiration ,nitrogenous wastes in building proteins and they can store the metabolic wastes ( salts and acids ) in the form of insoluble crystal in cytoplasm or vacuoles

18-Bec. It is important to decrease the plant temperature and help in the ascent of water and salts from the soil .

19-As in high temperature the sweat increases due to the dilation of the walls of Blood capillaries which make it easier to extract sweat from the blood

and the urine decreases ,in winter,the body loses water through urination more than sweating.

## V – Write the site and function of :

1-contain the melanin pigment which is responsible for the skin color.

2-extract the excess salts, water, traces of urea from the plant.

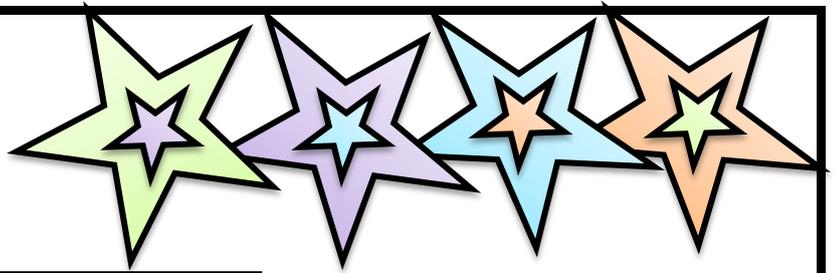
3-secrete oily substance to facilitate the exit of the hair from the skin and keep

At the free end of the hair (skin Dermis) it soft

4-Filtration of the blood to extract the wastes (kidney Cortex)

5-Guttation process(getting rid of water in the form of water drops on the

# Biology



Tips of the leaves)

6-Evaporation of the excess water in the stem of woody plants (cork of tree stem)

## **VII – Explain the role of each of the following in excretion :**

1-Get rid of CO<sub>2</sub>, water, volatile substances

2-The urine is collected from collecting ducts to be directed to the ureters

3-Pass the urine from the kidney to the urinary bladder.

4-Gets rid of excess salts, water, traces of urea

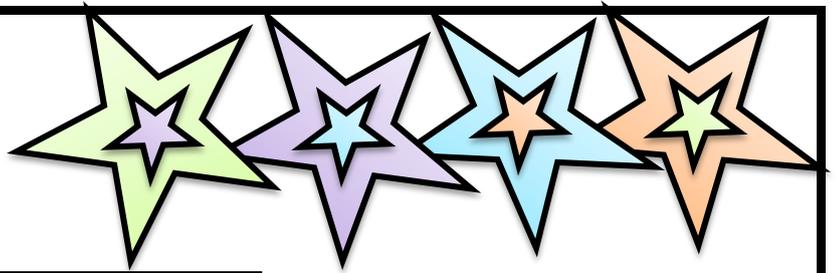
5-It converts poisonous material into non poisonous, deamination of excess amino acids and production of urea.

## **VIII Answer by yourself**

### **Write scientific terms:**

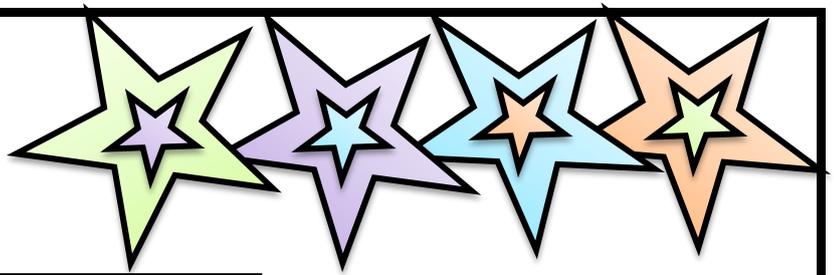
- 1- Sensory neuron
- 2- Reflex action
- 3- Motor nerves
- 4- Autonomic nervous system
- 5- Photoreceptors
- 6- Sensation
- 7- Sympathetic nerve
- 8- Sympathetic nerve
- 9- Somatic (voluntary)
- 10- Autonomic(involuntary)
- 11- Mixed nerves
- 12- Parasympathetic nervous system
- 13- Nerve cell (neuron)
- 14- Pons varolii
- 15- Cranial nerves
- 16- Sympathetic n.s.
- 17- Sympathetic n.s.
- 18- Peripheral nervous system.
- 19- Mid-brain
- 20- Skull
- 21- Thalamus
- 22- Dura matter

# Biology



- 23- Grey matter
- 24- Cranial nerves
- 25- Frontal lobe
- 26- Dorsal root
- 27- White matter
- 28- Grey matter
- 29- Medulla oblongata
- 30- Hypothalamus
- 31- Parietal lobe
- 32- Occipital lobe
- 33- Temporal lobe
- 34- Hind brain
- 35- Nerve bundle
- 36- Epineurium
- 37- Pia matter
- 38- Arachnoid
- 39- Synaptic cleft
- 40- Synaptic knob (button) / synapse
- 41- Acetyl choline and nor adrenaline
- 42-  $\text{Ca}^{++}$
- 43- Refractory period
- 44- Nerve impulse
- 45- Nerve
- 46- Neuroglia (glial cells)
- 47- neuron
- 48- neuron
- 49- Refractory period
- 50- Nerve impulse
- 51- Nerve impulse
- 52- Axon
- 53- Nissil granules
- 54- Auxins
- 55- Pulvinus
- 56- Tropism

# Biology

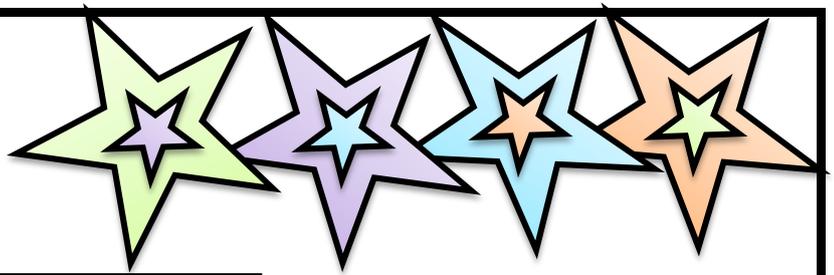


- 57- Arborizations
- 58- Nodes of Ranvier
- 59- Schwann's cells
- 60- Neuro lemma
- 61- Dendrites
- 62- Fifth lobe
- 63- Hypothalamus
- 64- Sensitivity
- 65- Auxins
- 66- Sensory organs (receptors)
- 67- Neuroglia cells
- 68- Adrenaline (epinephrine)
- 69- Myelin sheath
- 70- All or non law
- 71- Meningies
- 72- Arachnoid
- 73- 2cerebral hemispheres
- 74- Man
- 75- Resting potential
- 76- Tropism
- 77- Autonomic n.s.
- 78- Endocrine glands

**\* Give reasons\***

- 1- Because it is controlled by the spinal cord and doesn't pass to the brain.
- 2- Because it increases number of heart beats and force of contraction , aeration of lungs , blood glucose
- 3- Because it bends towards the gravity and away from the light when the plant is exposed to light from one side only.
- 4- Because it contains thousands of reflex arcs.
- 5-Due to the presence of thousands of reflex arcs in the grey matter and to give arapid response.
- 6-Because it contains centers of respiration , digestion blood vessels , heart beats .....( in voluntary movement)

# Biology



7-Bec. They act as stored food in the nerve cell, they disappear during activity and reform again at rest.

8-Due to the presence of chemical transmitters such as acetylcholine to transmit the nerve impulse from one neuron to another.

9-Bec. It acts as connective tissue to support the neurons , repair the damaged parts of neurons , nutrition of neurons

10- Due to the presence of nervous system and endocrine glands which coordinate between all body systems.

11- Due to the presence of neuroglia cells which have the ability to divide and repair the damaged parts of neurons

12- Due to loss of some neurons in the memory center in the frontal lobe and neurons can't regenerate.

13- Bec. It stimulate the secretion of adrenaline hormone which increases the glucose the glucose level in blood.

14- Bec. Rods are stimulated by dim light and cones are stimulated by bright light and colours.

15- Bec. It decreases heart beats and force of contraction , dilation of blood vessels.

17-Bec. Majority of nervous functions can be analysed to a group of reflex actions

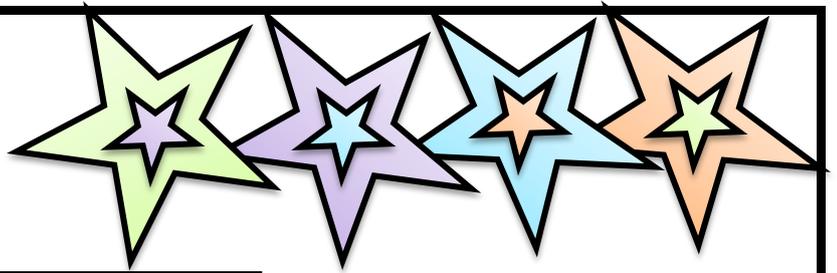
18- Bec. They consist of sensory and motor nerve fibres.

19- Bec. Dorsal root: carries sensory nerve fibres which transmit impulses from receptors to spinal cord then to brain and ventral root: carries motor nerve fibres that transmit nerve impulses to the effectors (responding organs)

20- Because cerebellum contains the center of balance and equilibrium.

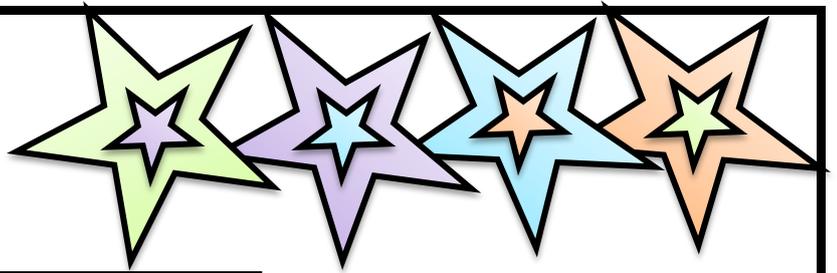
21- Bec. The inflow of  $\text{Ca}^{++}$  leads to rupture of the synaptic vesicles to release chemical transmitters which carry nerve Impulses to the next neuron.

# Biology



- 22- Bec. The stimuli may be not strong enough to cause action potential or this is during refractory period.
- 23- Bec. Thick ( myelinated) nerve it reaches 140m/sec. while in thin ( demyelinated )nerve it reaches 12 m/se as myelin act insulator.
- 24- Bec. The strong enough stimulus produces maximum response, weak stimuli are insufficient to produce action potential.
- 25- To increase the surface area to receive nerve impulses.
- 26- To secrete myelin sheath to increase the speed of nerve impulse transmission.
- 27- Bec. They are large in size and can't pass through the plasma membranes.
- 28- Bec. Roots are the positive geotropic .
- 29- Due to different sensitivity between root and stem.
- 30- Because they droop when you touch them or during darkness when water diffuses from to neighbouring tissues.
- 31- Due to accumulation of +ve ions ( $k^+$  ,  $Na^+$ ) outside and chlorine negative ions and negative protein inside the membrans and this is called polarization.
- 32- Bec. Shivering generate heat energy to warm the body.
- 33- Pulvinus are swollen structures , the lower surface shrink on being touched , this leads to water diffusing to the neighbouring tissues and hence the leaflets droop , when the stimulus is removed the cells regain their turgidity and leaflets open again.
- 34- Bec. It moves away from gravity as auxins migrate towards the gravity, high conc. Of auxins activate the growth in one side which causes bending away from gravity.
- 35- Due to equal distribution of light which causes equal distribution of auxins which leads to equal growth.

# Biology



36- Bec. They control all the body activities , organize the functions of different body organs and adjust the relation between man and environment and keep the body homeostasis.

37- Bec.  $Ca^{++}$  ions inflow causes rupture synaptic vesicles which contain chemical transmitters.

38- To restore the physiological properties and be ready to a new impulse

## \*Rewrite\*

1- Connective tissue

2- Cerebellum

3- medulla oblongata

4- Fore brain ( Frontalobe)

30- Piamatter

31- cerebellum

32- epineurium

33- 5<sup>th</sup> lobe

34- medulla oblongata

## \*Choose\*

1- sensation

2- axon

3- adrenal medulla

4- arachnoid

5- (a)

6- photo receptors

7- motor

8- receptors and CNS

9- more

10- -70 mv

11- 40 mv

12- 110

13- sympathetic

14- sympathetic

15- occipital

16- hypothalamus

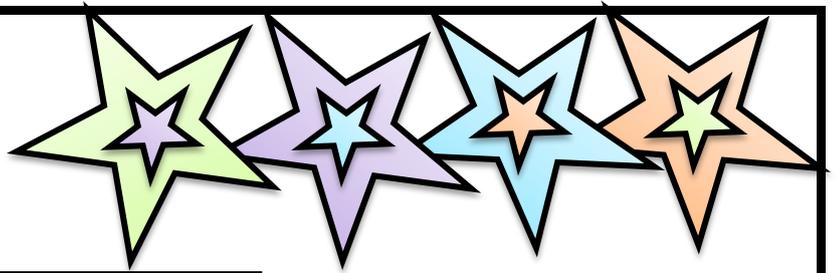
17- Fore brain

18- neurons

19- nerve

20- more

# Biology



- 21- gravity
- 22- centrosome
- 23- dendrites
- 24- motor
- 25- Na
- 26- stimulation
- 27- diameter of nerve fibre.
- 28- Ca
- 29- 350