

Topic :- Neural Control & Coordination

- 1 (d)
Two types of system in the body is responsible for inter-cellular communication nervous and hormonal.
1. **Nervous system** is responsible for short time and quick effect.
2. Endocrine system secretes hormone. Hormone effect is long lasting and slow.
- 2 (a)
A neuron comprises of cell body, axon and dendrites. The cell body contains cytoplasm, nucleus with organelles and Nissl's granules
The axons are long fibres which arises from the cell body. Dendrites are the short fibres with branched distal end
- 3 (d)
Multipolar neuron is a neuron that has one axon and several dendrons extending from its cell body in different directions.
- 4 (c)
Retina is the innermost non-vascular light sensitive coat. The optic part of retina has two parts pigmented and nervous part is transparent and contains three layers of cells-from inside-ganglion cells, bipolar cells and photoreceptor cells.
- 5 (b)
Neurotransmitters.
Synaptic knob possess synaptic vesicles containing chemicals called neurotransmitters
- 6 (d)
Based on the number of axon and dendrites, the neurons are multipolar (with one axon and two or more dendrites, found in the cerebral cortex), bipolar (with one axon and one dendrite; found in the retina of eye) and unipolar (cell body with one axon; found usually in the embryonic stage)
- 7 (a)
The outermost covering of brain is **duramater**, which is thick and non-vascular membrane.
- 8 (b)
The tympanic membrane is a thin, oval, tightly stretched membrane closing the external auditory canal internally. It separates the tympanic cavity from the external auditory meatus

9

(b)

Resting potential is the difference in electrical potential that exists across the membrane of nerve cells. The resting potential is maintained with the help of sodium-potassium pump.

10

(a)

Our paired eyes are located in sockets of skull called orbits. The adult human eyeball is nearly spherical in structure. The wall of the eyeball is composed of three layers. The anterior portion of this layer is called cornea. The middle layer choroid contains many blood vessels and looks bluish in colour

The inner layer is retina and it contains three layers of cells, *i.e.*, from inside to outside called ganglion cells, bipolar cells and photoreceptor cells

11

(d)

The primary visual area is located in occipital lobe of cerebrum. Decoding and interpretation of visual information. shape and colour occurs in occipital lobe.

13

(a)

3Na^+ outwards for 2K^+ into the cell.

The plasma membrane of the neuron is polarized due to the high out flow of Na^+ ions to outside and low intake of K^+ ion inside. 3Na^+ ions outflow by the ion channel of plasma membrane and 2K^+ ions inflow by it.

This creates a difference in the positive potential across the plasma membrane. The membrane is less positive inside which is normally termed as negative inside w.r.t outside

14

(c)

Temporal lobe possesses Wernicke's area that is responsible for understanding speech, writing and spoken words.

15

(b)

The vagus cranial nerve (X^{th} cranial) of human is made up of both sensory (incoming of afferent) and motor (outgoing or efferent) nerve fibres. It regulates the function of heart rate, respiration rate and digestive activities. Excessive stimulation of vagus nerve give rise to peptic ulcer in humans.

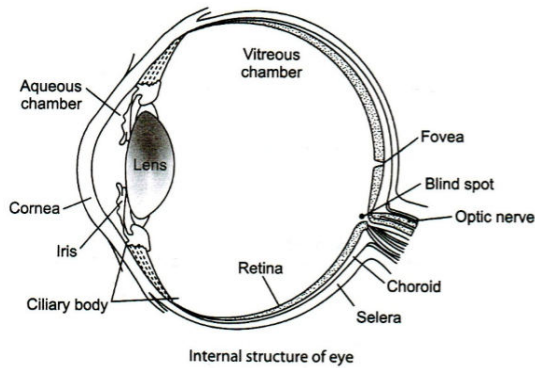
16

(c)

Iris.

The choroid layer is thin over the posterior two third of the eyeball. But it becomes thick in the anterior part of form ciliary body. The ciliary body itself continues forward to form a pigmented and opaque structure called the iris which is the visible coloured portion of eye. The eyeball contains a transparent crystalline lens which is held in place by ligaments attached to ciliary body.

In front of the lens, the aperture surrounded by the iris is called the pupil. This diameter of the pupil is regulated by muscle fibres of iris



- 17 **(b)**
The cristae of rabbit ear helps in maintaining balance in transverse position of longitudinal axis of semi-circular canals.
- 18 **(b)**
The inner parts of cerebral hemisphere and a group of associated deep structures like amygdala, hippocampus, etc. form a complex structure called the limbic lobe or limbic system along with hypothalamus. It is involved in the regulation of sexual behavior expression of emotional reactions, (*e.g.*, excitement, pleasure, rage and fear) and motivation
- 19 **(d)**
Purple.
Both (a) and (b), *i.e.*, cones and rods
- 20 **(d)**
Nervous system is formed of four types of cells.
(i) **Neurons** - structural and functional unit.
(ii) **Neuroglia** - Phagocytic and provide nutrition to neuron
(iii) **Ependymal cells** - their cilia move the cerebrospinal fluid
(iv) **Neurosecretory cells** - these secrete neurohormones.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	D	A	D	C	B	D	A	B	B	A
Q.	11	12	13	14	15	16	17	18	19	20
A.	D	D	A	C	B	C	B	B	D	D