

- \* 1. Briefly describe the structure of the following:  
(a) Brain (b) Eye (c) Ear
- \* 2. Compare the following:  
(a) Central neural system (CNS) and Peripheral neural system (PNS)  
(b) Resting potential and action potential  
(c) Choroid and retina
- \* 3. Explain the following processes:  
(a) Polarisation of the membrane of a nerve fibre  
(b) Depolarisation of the membrane of a nerve fibre  
(c) Conduction of a nerve impulse along a nerve fibre  
(d) Transmission of a nerve impulse across a chemical synapse
- \* 4. Draw labelled diagrams of the following:  
(a) Neuron (b) Brain (c) Eye (d) Ear
- \* 5. Write short notes on the following:  
(a) Neural coordination (b) Forebrain (c) Midbrain  
(d) Hindbrain (e) Retina (f) Ear ossicles  
(g) Cochlea (h) Organ of Corti (i) Synapse
- \* 6. Give a brief account of:  
(a) Mechanism of synaptic transmission  
(b) Mechanism of vision  
(c) Mechanism of hearing
7. Answer briefly:  
(a) How do you perceive the colour of an object?  
\* (b) Which part of our body helps us in maintaining the body balance?  
\* (c) How does the eye regulate the amount of light that falls on the retina.
- \* 8. Explain the following:  
(a) Role of  $\text{Na}^+$  in the generation of action potential.  
(b) Mechanism of generation of light-induced impulse in the retina.  
(c) Mechanism through which a sound produces a nerve impulse in the inner ear.
- \* 9. Differentiate between:  
(a) Myelinated and non-myelinated axons  
(b) Dendrites and axons  
(c) Rods and cones  
(d) Thalamus and Hypothalamus  
(e) Cerebrum and Cerebellum
- \* 10. Answer the following:  
(a) Which part of the ear determines the pitch of a sound?  
(b) Which part of the human brain is the most developed?  
(c) Which part of our central neural system acts as a master clock?
11. The region of the vertebrate eye, where the optic nerve passes out of the retina, is called the  
(a) fovea  
(b) iris  
(c) blind spot  
(d) optic chiasma
- \* 12. Distinguish between:  
(a) afferent neurons and efferent neurons  
(b) impulse conduction in a myelinated nerve fibre and unmyelinated nerve fibre  
(c) aqueous humor and vitreous humor  
(d) blind spot and yellow spot  
(f) cranial nerves and spinal nerves.