DPP
DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 9

Topic :- Neural Control & Coordination

1 **(a)**

Ideally, there are as many pairs of spinal nerves as the number of vertebrae. However, in man 31 pairs of spinal nerves are present including 8 pairs of cervical nerves, 12 pairs of thoracic nerves, 5 pairs of lumbar nerves, 5 pairs of sacral nerves and 1 pair of coccygeal nerves.

The cervical vertebrae are the vertebrae of neck region. Whether the neck is short as in mouse or long as in a camel or giraffe, their number is seven in all mammals (including man) except some, *e.g.*, sloths and the sea cows.

2 **(a)**

In resting nerve fibre (a nerve fibre that is not conducting an impulse), sodium ions (Na^+) predominate in the extra cellular fluid, whereas potassium ions (K^+) predominate in the intracellular fluid (within the fibre). This result in the fact that, the resting membrane has only a poor permeability for Na^+ although it has a higher permeability for K^+.

3 **(c)**

There are twelve cranial nerves in mammals. Hypoglossal (the 12^{th}) cranial nerve is responsible for movement of neck and tongue. It contains both sensory and motor fibres.

4 **(d)**

The vagus nerve is responsible for various tasks such as gastrointestinal peristalsis, sweating and quite a few muscle movements in the mouth, including speech and keeping the larynx open for breathing.

5 **(b)**

The rods are longer, slender and cylindrical, while cones are shorter, thicker and somewhat cube-shaped. Rods are related with vision in dim light. Cones are related with day vision and colour vision. Retina of nocturnal birds, such as owls, contains only **rods**. That is why, owls sleep during day and hunts during night.

6 **(b)**

The mammalian brain is covered by three protective meninges-the innermost piamater, middle arachnoid and outermost duramater. The space between

piamater and arachnoid is called sub-arachnoid space.

7 **(c)**

Areolar connective tissue contains collagen, epithelium contains keratin and muscle fibres contains actin but neuron does not contain melanin. Neuron is the structural and functional unit of nervous system.

8 **(a)**

Sympathetic nervous system is a type of autonomic nervous system, which has its role in opposing the parasympathetic nervous system. There is an erector pilli, which causes erection of hair under the control of sympathetic nervous system

9 **(d)**

Dendrites are short fibres, which branch repeatedly and projects out of the cell body and also contain Nissl's granules

10 **(a)**

Interoceptors are receptors, which are sensitive to stimuli coming from internal body organs. These carry sensations of pain, thirst, visceral pain, nausea as well as sexual and circulatory sensations.

11 **(a)**

Malleus is attached to the tympanic membrane and the stapes is attached to the oval window of the cochlea

12 **(d)**

A locus of nerve tissue in the ventro-medial nucleus of the hypothalamus is known as satiety center and it controls the appetite

13 **(c)**

Human eyes have remarkable power of accommodation by changing the convexity of the lens. Due to action of the muscles of ciliary body and suspensory ligament the focal length of the lens can be changed. Then the objects can be focused in different intensity of light from varying distances. For accommodation of distant objects, ciliary muscles relaxed and suspensory ligaments tightly stretched.

15 **(c)**

The cell body of neuron contains certain granular bodies called Nissl's granules

16 **(d)**

The pinna collects the vibrations in the air, which produce sound. The external auditory meatus leads inwards and extends upto the tympanic membrane (the ear drum). There are very fine hairs and wax secreting sebaceous glands in the skin of pinna and meatus. The tympanic membrane is composed of connective tissues covered with skin outside and with mucus membrane inside

17 **(a)**

Retina is the lining of the interior of the vertebrate eye containing a concentration of photoreceptor cells known as rods and cones that are connected to the optic nerve *via* bipolar cells.

18 **(a)**

Rhodopsin, also known as visual purple, is a biological pigment in photoreceptor cells of

the retina that is responsible for the first event in the perception of light

19 **(a)**

Level of organization in case of cnidarian is tissue level. So, the neural organization must be made up to this level. In *Hydra,* neural organization is made up of network of neurons

20 **(a)**

All multicellular animals contain elongated nerve cells, called neurons. Each neuron has a cell body, axon and smaller processes called dendrites. An **axon** is the process of a nerve cell that carries impulses away from it. Axons run parallel to one another and each is surrounded along its whole length by series of Schwann cells. They may have myelin sheath.

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