SARASWATI

HEAD OFFICE
208, CD, LOCAL SHOPPING CENTER
AGGARWAL SHOPPING PLAZA,

BRANCH -1
AYODHYA CHOWK SEC -3
ROHINI

BRANCH -2
DC CHOWK SEC- 9, ROHINI

9TH & 10TH MATHS / SCIENCE
11TH & 12TH – PHYSICS / CHEMISTRY / MATHS / BIOLOGY
EXCLUSIVE BATCH FOR NEET / JEE ASPIRANTS
Ph no. 9696 500 500 / 9696 400 400

Ch- 21 (Neural Control and Coordination)

1. Why are neurons excitable?

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2. What is a synaptic cleft?

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3. Rearrange the following in the correct order of involvement in electrical impulse movement:

Synaptic knob, dendrites, cell body, axon terminal, axon.

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4. Name the structures involved in the protection of the brain.

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5. Which part of the central nervous system acts as a master clock?

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6. Which part of the human brain is the most developed?

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7. Name the band of nerve fibres that joins the cerebral hemispheres in mammals.

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8. Our reactions like aggressive behaviour, use of abusive words, restlessness, etc. are regulated by brain. Name the part involved.

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9. What do the grey and white matter in the brain represent?

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10. How does the eye regulate the amount of light that falls on the retina?

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11. Name the visible coloured portion (circle) of our eyes.

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12. Which cells of the retina enable us to see the coloured objects around us?

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13. Name the area of retina which contains only cones and no rods?

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14. The region of the vertebrate eye, where the optic nerve passes out of retina is called

(a) fovea, (b) iris, (c) blind spot, (d) optic chiasma.

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15. Why is blind spot devoid of vision?

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16. Which part of the inner ear is disturbed during the journey?

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17. Arrange the following in the order of reception and transmission of sound waves from the external auditory canal: cochlear nerve, ear drum, stapes, incus, malleus, cochlea.

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2 MARKS

18. Compare the central nervous system (CNS) and peripheral nervous system (PNS).

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19. Distinguish between somatic and autonomic nervous systems.

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20. Distinguish between afferent neurons and efferent neurons.

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21. Distinguish between cranial nerves and spinal nerves.

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22. Differentiate between dendrites and axons.

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23. Differentiate between myelinated and non myelinated axons.

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24. Why is the axoplasm of a resting axon negatively charged?

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25. What happens when the membrane of a nerve cell carries out a sodium-potassium pump?

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26. The membrane of a resting nerve fibre is said to be in a polarised state. What is meant by this statement?

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27. Explain the role of Na^+ in the generation of action potential.

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28. Distinguish between impulse conduction in a myelinated nerve fibre and in an unmyelinated nerve fibre.

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29. Complete the statement by choosing appropriate match among the following:

(a) Resting (i) Chemicals involved in the transmission of impulses at synapses.

(b) Nerve impulse (ii) Gap between pre- synaptic and post-synaptic neurons.

(c) Synaptic cleft (iii) Electrical potential difference across the resting neural membrane.

(d) Neurotransmitters (iv) An electrical wave-like response of a neuron to a stimulation.

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30. Differentiate between thalamus and hypothalamus.

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31. Write short notes on midbrain.

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32. Compare choroid and retina.

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33. Differentiate between rods and cones.

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34 . Distinguish between aqueous humor and vitreous humor.

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35. Distinguish between blind spot and yellow spot.

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36. How do you perceive the colour of an object?

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3 marks

37. Name the two organ systems involved in coordination of body functions in human beings. How do they differ from each other in achieving this?

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38. Draw a labelled diagram of a neuron.

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39. Explain the polarisation of the membrane of a nerve fibre.

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40. Explain depolarisation of the membrane of a nerve fibre.

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41. Write short notes on hindbrain.

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42. Write short notes on retina.

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43. Explain the mechanism of generation of light-induced impulse in the retina.

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44. Write short notes on cochlea.

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45. Explain the mechanism through which a sound produces a nerve impulse in the inner ear.

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5 marks

46. Explain the conduction of a nerve impulse along a nerve fibre.

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47. Explain the transmission of a nerve impulse across a chemical synapse.

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48. Draw a labelled diagram of human brain.

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49. Write short notes on forebrain.

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50. The human neural system provides an organised network of point-to-point onnections for a quick coordination. It is divided into two parts: central nervous system and peripheral nervous system and the nerve fibres are also of two types, based on the direction of conduction of nerve impulse.

(a) What are the two divisions of the peripheral nervous system?

(b) Why should there be two types of nerve fibres? Name them.

(c) What values are exhibited by them?

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51. In a tour to a place at high altitude (mountains), a person complains of dizziness and vomiting

sensation. Premi, a college student offers him cotton buds to block his ears.

(a) How is ear involved in this discomfort?

(b) Mention the value(s) shown by Premi.

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52. A few friends living in a group housing society, were taking a stroll after dinner. Suddenly Arjun, the 12-year old boy screamed on seeing a snake and his heart was beating very fast. The eldest in the group, Mohan explained to the group, what such actions are called and how it happens.

(a) What name is given to such actions?

(b) Write down what Mohan would have described to the group.

(c) What values are shown in the action of Mohan?

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53. The sense organs detect the different types of changes in the environment and send appropriate signals to the central nervous system, where the inputs are processed and analysed and signals are sent to different parts of the brain. Eyes are the sense organs to see.

(a) Name the photoreceptor cells in the retina of the eye and the pigments present in each of these types of cells.

(b) How do they function differently?

(c) What is blind spot in the eye? Why is it called so?

(d) Do you understand any value with these arrangements?

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