



BIOLOGY

BOOKS - MBD

Neural Control and Co-ordination

Example

1. What do you mean by saltatory conduction of nerve impulse?



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2. Give the term for the association of axon of a nerve fibre and dendron of another neuron.



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3. Name the neurotransmitter released at the synapse by the sympathetic nerve fibres.



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4. Acetylcholine is released at the ending of which type of nerve fibres?



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5. Which is the largest lobe of human brain?



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6. Name the cavity of cerebral hemisphere of brain.



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7. Name the seat of memory and intelligency in human brain.



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8. Which part of human brain acts as relay centre?



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9. Name the thermoregulatory centre of human body.



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10. Which two cavities of brain are connected by foramen of Monro?



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11. State the functions of cerebellum.





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12. Which part of brain control the heart and breathing?



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13. What do you understand by binocular vision?



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14. Name the site where tactile and gustatory receptors are present?



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15. What is the histological structure of human lens?



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16. Name two of photoreceptors present in the eye.



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17. Which part of eye gives colour to eye?



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18. Name the layers which form middle layer of eye.



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19. Why cornea can be easily transplanted?



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20. Blind spot in the eye is devoid of ability of vision. Why?



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21. Fill in the blank

Neurotransmission through a synapse is always

fromto.....



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22. Fill in the blank

Auditory area is located inwhile
olfactory area is located inof cerebral
hemisphere.



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23. Fill in the blank

Brain is located in.....while the spinal cord
is located in



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24. Fill in the blank

Peripheral part of cerebral hemisphere is
calledwhile inner part of cerebral
hemisphere is called



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25. Fill in the blank

A spinal nerve is anerve while the olfactory nerve is anerve.



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26. True or False :

Centres for involuntary functions are located in cerebral cortex.



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27. True or False :

Cranium is a part of brain.



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28. True or False :

A sensory nerve conducts nerve impulses from brain to muscles of the body.



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29. True or False :

All nerves arising from spinal cord are mixed.



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30. True or False :

Nerve impulses travel slower in a myelinated nerve fibre than in a non-myelinated nerve fibre.



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31. Give the technical terms used for the following:

A sudden change in the environment (internal or external) is strong enough to excite the nerve or muscle or organism as a whole.



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32. Give the technical terms used for the following:

When a stimulus is strong enough to evoke response.



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33. Give the technical terms used for the following:

When a stimulus is strong enough to evoke response.



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34. Give the technical terms used for the following:

The energy of the stimulus is transformed into electric energy by neurons and this electric energy initiates a series of events which travel along the neuron as the conduction of waves of electric charge.



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35. Give the technical terms used for the following:

A wave-like change in the membrane's electrical properties.



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36. Briefly describe the structure of the following :

Brain



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37. Briefly describe the structure of the following: Eye



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38. Briefly describe the structure of the following: Ear



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39. Differences between

Central neural system and peripheral neural system.



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40. Differences between

Resting potential and action potential.



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41. Differences between

Choroid and retina.



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42. Explain the following processes:

Polarisation of the membrane of a nerve fibre



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43. Explain the following processes:

depolarisation of the membrane of a nerve fibre



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44. Explain the following processes.

Conduction of a nerve impulse along a nerve fibre.



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45. Explain the following processes:

Transmission of a nerve impulse across a chemical synapse



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46. Draw labelled diagrams of the following:

Neuron



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47. Draw labelled diagrams of the following:

Ear



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48. Draw labelled diagrams of the following:

Brain



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49. Draw labelled diagrams of the following:

Ear



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50. Write short notes on the following: Neural coordination



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51. Write short notes on the following: Forebrain



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52. Write short notes on the following:

Midbrain



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53. Write short notes on the following:

Hindbrain



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54. Write short notes on the following -

Retina



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55. Write short notes on the following: Ear

ossicles



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56. Write short notes on the following -

Cochlea



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57. Write short notes on the following -

Organ of Corti



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58. Write short notes on the following -

Synapse.



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59. Give a brief account of : Mechanism of synaptic transmission



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60. Give a brief account of : Mechanism of vision



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61. Give a brief account of : Mechanism of hearing



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62. Answer briefly: How do you perceive the colour of an object?



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63. Answer briefly: Which part of our body help us in maintaining the body balance?



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64. Answer briefly: How does the eye regulation the amount of light that falls on the retina.



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65. Explain the following: Role of Na^+ in the generation of action potential.



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66. Explain the following :

Role of Ca^{+} in the release of neurotransmitters at a synapse.



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67. Explain the following :

Mechanism through which a sound produces a nerve impulse in the inner ear.



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68. Explain the following: Mechanism of generation fo light-induced impulse in the retina.



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69. Differentiate between: Myelinated and non-myelinated axons



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70. Differentiate between: Dendrites and axons



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71. Differentiate between: Rods and cones



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72. Differentiate between: Thalamus and Hypothalamus



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73. Differentiate between: Cerebrum and Cerebellum



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74. Answer the following: Which part of the ear determines the pitch of a sound?



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75. Answer the following: Which part of the human brain is the most developed?



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76. Answer the following: Which part of our central neural system acts as a master clock?



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77. 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

Answer:



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78. Distinguish between: afferent neurons and efferent neurons



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79. Distinguish between: impulse conduction in a myelinated never fibre and unmyelinated never fiber



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80. Distinguish between: aqueous humor and vitreous humor



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81. Distinguish between: blind spot and yellow spot



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82. Distinguish between: cranial nerves and spinal nerves.



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83. 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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84. Comment upon the role of ear in maintaining the balance of the body and posture.



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



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86. Arrange the following in the order of reception and transmission of sound wave from the ear drum:

Cochlear nerve, external auditory canal, ear drum, stapes, incus, malleus cochlea.



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87. During resting potential, the axonal membrane is polarised, indicate the movement of +ve and -ve ions leading to polarisation diagrammatically.



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



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89. Our reaction like aggressive behaviour, use of abusive words, restlessness etc. are regulated by brain, name the parts involved.



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



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91. Where is the hunger centre located in human brain?



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92. Which sensory organ is involved in vertigo(sensation of oneself or objects spinning around)?



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93. While travelling at a higher altitude, a person complains of dizziness and vomiting sensation. Which part of the inner ear is disturbed during the journey?



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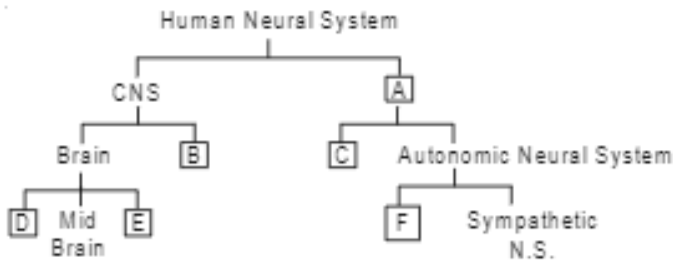
94. Complete the statement by choosing appropriate match among the following:

- | | |
|-----------------------|--|
| (a) Resting potential | (i) chemical involved in the transmission of impulses at synapses. |
| (b) Nerve impulse | (ii) gap between the 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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95. The major part of the human neural system is depicted below. Fill in the empty boxes with appropriate words.



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96. What is the difference between electrical transmission and chemical transmission?



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97. Neutral system and computers share certain common features. Comment. (Hint : CPU, input-output devices).



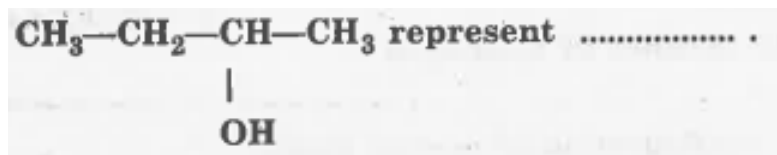
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98. What is the function ascribed to eustachian tube?



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99. Fill in the blanks:



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100. label the following in the given diagram using arrow.

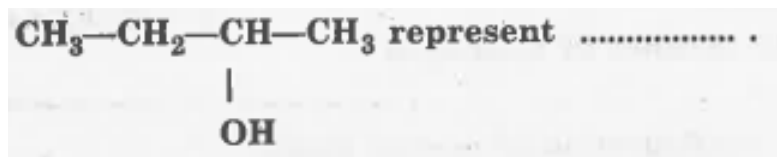


Cornea



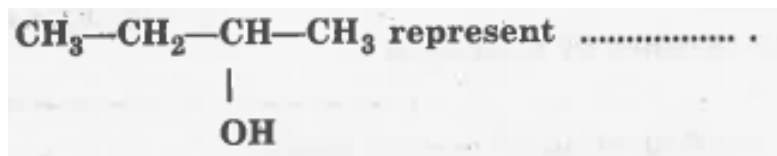
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101. Fill in the blanks:



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102. Fill in the blanks:



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103. label the following in the given diagra
using arrow.



Vitreous chamber



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104. Explain the process of the transport and
release of a neurotransmitter with the help of
a labelled diagram showing a complete
neuron, axon terminal and synapse.





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105. Name the parts of human forebrain indicating their respective functions.



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106. Explain the structure of middle and internal ear with help of diagram .



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107. Name the structural components of nervous system.



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108. What is the main function of neuron?



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109. In which form sensory information is transmitted?



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110. Differentiate nuclei and ganglia.



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111. Differentiate tracts and nerves.



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112. Write two unique properties of nerve cells.



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113. Why are membrane of nerve cells called polarised membrane?



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114. What is the cause of membrane potential?



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115. Define ion channels.



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116. Why are membrane of neurons capable of excitation?



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117. In a resting membrane which ions are more permeable?



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118. Name the two ions which cannot move across the resting membrane of neuron.



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119. What is corpus callosum?



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120. What is reflex action? Give one example of simple reflex action.





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121. How are the functions of body regulated?

Explain.



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122. What is the role of the nervous system in the body?



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123. Write short note on meninges present around brain.



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124. Name the fluid present in the spaces in between meninges. Mention its function.



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125. What is nerve impulse?



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126. Write four functional properties of neuron.



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127. Define resting potential , action potential and electrical potential.



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128. Show the distribution of ions in and around the axon.



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129. How is action potential generated?



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130. What is refractory period?



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131. How the movement of ions across plasma membrane of neuron is maintained? Show with sketch only.



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132. Describe briefly the cerebrum of human brain.



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133. What functions does hypothalamus serve in co-ordinating various activities of the body?



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134. With the help of a diagram explain the functional areas of cerebrum.



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135. Explain the structure and functions of mid brain.



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136. What functions does the mid brain nuclei perform in human brain?



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137. Give an account of hind brain of human brain.



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138. Give a brief account of cerebral cortex of human brain.



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139. What is brain stem?



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140. Write a note on ventricles of brain.



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141. What are cranial nerves? How many cranial nerves are there in man?



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142. Write the names of cranial nerves.



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143. Show which of these are sensory, motor or mixed nerves.



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144. List the function of VI, VII, IX and Xth cranial nerves.



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145. Describe the structure of spinal cord.



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146. List the functions of spinal cord.



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147. Draw a labelled diagram of spinal cord of man.



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148. What are spinal nerves? How many spinal nerves are present in case of man? Give the origin of spinal nerve.



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149. List the functions of sympathetic and parasympathetic nervous systems (on stimulation).



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150. Compare the effects of sympathetic and parasympathetic nerves on the heart, pupil, blood vessels and blood pressure.



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151. Define Reflex action.



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152. Differentiate conditioned reflex and unconditioned reflex.



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153. Discuss retina of eye ball.



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154. Draw a sketch to show the arrangement of rods and cones in the retina.



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155. Distinguish crista and macula.



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156. Describe how each of the following is achieved in us:

hearing



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157. Describe how each of the following is achieved in us:

balance



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158. Draw well labelled diagram to show the structure of crista and macula.



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159. Describe ear ossicles.



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160. Write function of each part of human brain.





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161. Describe histological structure of retina layer of eyeball.



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162. With a simple sketch show reflex arc.



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163. Explain the structure of cochlea.



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164. What is organ of Corti? Draw a diagram to show its position.



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165. Why is the mode of conduction of electrical impulse along the myelinated

neurons advantageous to a non-myelinated neuron? What is this type of conduction called?



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166. How will the hearing be affected if the eustachian tubes get blocked?



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167. What type of reflex are the following:

Sweating in summer



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168. What type of reflex are the following:

Solving mathematical sums



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169. What type of reflex are the following:

Knitting and swimming



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170. What type of reflex are the following:

Blinking of eye.



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Exercise

1. Which part of brain controls heart beat?



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2. Write name of chemical secreted by axon endings into synaptic cleft.



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3. What is synapse?



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4. Name the sensory cranial nerve that is responsible for sense of equilibrium of the body.



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5. What do you mean by saltatory conduction of nerve impulse?



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6. List the functions of cerebrum.



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7. List the unique features of human brain.



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8. Why does a person not able to see for some time when he comes out of a well lighted room at night or enters a dark room at day time?



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9. Differentiate between polarized membrane and depolarized membrane.



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10. What is reflex action? What is its significance?



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11. Name the ear ossicles in the order of arrangement in human ear. What role do they play in hearing?



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12. What is the function of cerebro spinal fluid?



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13. What are cone cells?



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14. Draw median longitudinal section of human brain.



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