

Neurones and Synapses:

- 1) Explain why it is possible to use the drug atropine to dilate the pupils? (3)
- 2) What other effects is atropine likely to have and why? (4)
- 3) Suggest how morphine is able to decrease the sensation of pain? (3)
- 4) Suggest how antidepressants like serotonin are likely to work? (3)
- 5) Describe the sequence of events which takes place at a synapse? (5)
- 6) What is the reason why anti-epileptics focus on increasing the speed of activity of the enzymes which break down the neurotransmitter? (3)
- 7) Describe how snake venom is likely to cause death? (3)
- 8) Using your knowledge of reflexes, explain how and why the pupil shrinks in bright light? (3)
- 9) Why are the receptors known as transducers? (2)
- 10) Give the functions of synapses? (4)
- 11) Nerve conduction is energy intensive; explain where ATP is used during nerve conduction? (3)
- 12) What is rigor mortis and how does it occur? (3)
- 13) A particular poison blocks the action of the sodium-potassium ATPase pump. What effects will this have and why? (3)
- 14) Explain why there are both voltage gated and non-voltage gated sodium and potassium channels but only voltage gated calcium channels in neurones? (3)
- 15) What is 'all-or-nothing' and why is it significant? (3)
- 16) Explain the functions of reflexes? (3)
- 17) What effect will Multiple Sclerosis have on nerve conduction and why? (3)
- 18) A particular stimulant works by shortening the hyperpolarisation phase; will it be effective? Explain your answer. (3)
- 19) Nicotine causes stimulatory effects at the synapses; suggest how it may do so? (3)

- 20) Why does the brain not get involved in most reflexes? (2)
- 21) Why are the non-voltage gated potassium channels partially open at rest? (2)
- 22) What are the likely effects on the nervous system from eating too much/many;
- a. Salt (2)
 - b. Bananas (2)

Total: /68