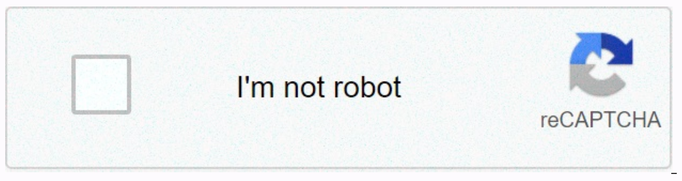

Continue

Ap bio nervous system multiple choice questions and answers pdf

Student Resources Multiple Choice Questions Lecturer Resources Book Chapters Browse: All Topics Pharmacy Read more: Online Resource Centres VLE/CMS Content Test Banks On our catalogue pages: Find a textbook Find a local representative Answer the following questions, then press Send to get the points. 38. The neurotransmitter provides a chemical signal between neurons to prevent or inspire action potential. A. Describe the pattern of this signal, and this description includes the roles of synapses, receptors, post- and presynappt neurons, exosytosis, endosytosis, ligandiporttic ion channel and the electrical potential of the membrane. B. Explain the stimulating or inhibitive effect of key ion elements, Na+ and Cl, on the electrical potential of the postsynaptical membrane. C. Edit the chart to create an image of the effect explained above. Select from the following list to fill in the aihiot: Na+ Cl stimulator inhibitor D. In the 1960s, Burnstock and co-workers provided evidence that the ATP is a neurotransmitter. This was received with skepticism and largely abandoned until 1984, when the modified ATP format that inhibits atp cellular function was demonstrated as an effect on extra-cell signal transmission. Based on the central role of the ATP in biological systems justifies the resistance of the scientific community to accepting the role of the ATP as an intermediary. Based on the fact that the ATP has survived throughout life evolution on Earth, it justifies such a role for the ATP. Based on these two perspectives, the role of collaborative interactions in the positive selection of ATP as an intermediary is analyzed. 39. Neurons and muscle cells maintain high levels of potassium ions across the plasma membrane. The extra-cellular state has a high concentration of sodium ion. With other electrical potential, the cell membrane becomes polarized. A. Construct a representation of the cell membrane, indicating the diagram below, containing the following information: the arrow indicates the direction in which the movement of potassium ions is controlled by a concentration gradient marked with an arrow indicating the direction in which the movement of sodium ions is controlled by the concentration gradient, and give a brief picture of potassium roles and sodium ion pumps as an arrow marked to maintain other electrical potential indicate a relative sign of the electrical potential difference (voltage) between the in-cell and non-cellular states in connection with other electrical potential When the inspiring neurotransmitter receptor is activated, the electrical potential difference between the membrane of the neuron decreases, causing a change in the composition of sodium pump proteins. B. Justify the effect of sodium ions across the membrane as positive feedback in a situation where the electrical potential difference below the threshold voltage and operational potential is generated. The potential for action is transmitted along the neuron as a voltage wave. One wavelength appears below the chart at the moment when the maximum electrical potential of the film has been reached. C. Construct a description of the key parts of the signal propagation, indicating a diagram containing the following information: a marked arrow indicating the direction of movement of potassium ions by a concentration gradient, a marked arrow indicating the direction in which the movement of potassium ions is controlled by an electrical potential difference across the membrane gives a brief picture of the functions of potassium and sodium ion pumps operational potential Most neurons need to transmitte the signal quickly. Myocarditis sarcortes (muscle cell membranes) receive signals that combine data on both sympathetic (rapid response on a shorter time scale) and parasympathetic (stable response over a longer time scale). The potential for action, which causes seasonal reductions in the heart muscle (see figure below), is extended by the release of maximum ca+2 from a smooth endoplasmic reticulate called calcium-induced calcium release (CICR). D. As regards cardiac function in the field of oxygen and nutrients in combat or flight conditions or restful conditions, the argument that this expansion indicates that the coordination of events must be regulated is justified. E. To stop the tinting heart during open heart surgery, A KCl solution is injected into the heart muscle. Explain the effect of a large extra-cell dose of K+ on transmitting the potential for sarcorm function. 40. The brain integrates new information through memory formation and learning. Let's give alternative explanations of the brain's ability to renovate in response to an experience called plastic. This section examines these explanations. Consider interacting with these three cell types that integrate data to get a response to external cues: A. Use the image to form a representation of the direction of data flow. Wood-like structures developed for the central body of neurons, called dendriites. They allow the neuron to integrate data from multiple sensory receptors. B. In the diagram, describe what fine-tuning the basic stimulus response system is needed to achieve even the simplest response: move away. Awareness of orientation and movement in the body is called proprioception. Describe how multiple neurons are needed to obtain proprioception. The generation of

neurons occurs during development. However, adults continue to form memories and learn. Reorganisation of neuron connections is possible and several studies of steroid hormones have been shown to produce dendritic plasticity. The hippocampus is active during memory formation and learning, and significant variations in dendrogen counts (Wooley et ai., Journal of Neuroscience, 10, 1990) were observed in the hippocampus correlated with estrogen fluctuations during the estrogen cycle. Recently, variation in these structures is included in a behavioral pattern known as chronic unpredictable mild stress (CUMS). In rats, CUMS can be caused by environmental factors such as electric shock, immobilization or isolation (Qiao et ai., Neuro Plasticity, 2016).C. Ask two scientific questions that can be studied to combine an individual's dynamic homeostasis and survival benefit with dendritic plasticity. An alternative explanation for the way the brain integrates new information is synaptic plasticity. This has been demonstrated by Nabavi and co-workers (Nature, 511, 2014). The rat created the associated memory by pairing two stimuli: the tone and the foot shock. The animal was previously trained to avoid pressing the lever, which produces a reward with a chalk for the shock of the lever. After air conditioning, the animal reacted to the tone as if it were a shock and avoided reward. The relationship between the stimulating and inhibiting receptor of the synaptic membrane was shown to increase with the experience. The compact device, which is optically activated and controlled by flashing light, was added to the rat's brain to the core of the tone-emicting neuron. When the experimenters used light with 1 flash per second (1 Hz), the device caused the expression of one type of protein cell, and when using light with 100 flashes per second (100 Hz), the device caused another type of protein to manifest itself. Each diagram illustrates the rat's reaction to environmental tips. One day passed between the data collection represented by each chart. D. Analyze this data on the basis of evidence provided for synaptic plasticity. The third explanation for memory formation and learning can be found in David Glanzman's laboratory (Elife, 2014). The sea snaal (Aplysia) can be trained to pull out its siponic tube. Sensory and motor neurons can be grown in tissue cultures. The increase in serotonin in tissue culture increases the number of synaptic connections and training can be induced in vitro. Cells that had developed stimulus-response behavior were treated with a substance that destroys synaptic receptors. Nevertheless, the trained response was maintained and there were indications that the data had been retrieved from neuronal heart. E. Assume that this work on memory location has been confirmed. Create a representation of the flow of data, in which a fourth paragraph marked nucleus of neuron is added to the diagram in Part A. stimulus and neurone disease. Mark the presentation with an entry indicating the flow of information. Explain pose questions about the ethical or social consequences of this technology. how this form of plasticity is more dynamic than theories in which memory is located in synaptic or dendritic structures, and how it can lead to treatments for disorders such as post-traumatic stress syndrome, where remembering creates an injury. 41. Autism is a collection of communication and socialization behaviors. Evidence of the inheritance of a gene predisposing to an individual during early development has been demonstrated with pedigree genes such as the following (after Allen-Brady, molecular psychiatry, 14, 2009). Males (squares) and females (circles) are affected when the symbol is filled in, struck through when the dead, and the genome cannot be determined, and crushed while alive and the genome is not determined. A. Other evidence suggests that autism is not x-linked. Provide an alternative explanation that may explain this information.B. Stem cells taken from fathers without autism characteristics and their sons were induced to form a tissue culture of neurons. Compared to the father, those taken from the boy showed an accelerating increase in the number of synapses. Describe the possible consequences for data integration if this in vitro growth also occurs in vivo. The high number of phenovatypes and genes associated with this disorder has led researchers to point to the characteristics of autism described on a spectrum of disorders, ASD. One of the genes is bola2. Although humans and other primates have genomes reported to have only a 2 percent deviation, a specific form of bola2, found in 99% of human genomes that have been mapped, does not occur in other primates. Bola2 is not in the Neanderthal genome. Even more interestingly, individual nucleotide variations in human bola2 are significantly less common than genes associated with other brain diseases such as schizophrenia. C. Evaluate the selection pressure and direction indicated in this observation (positive or negative). D. SEVERAL hundred genes are entangled in ASD, and many more are likely to eventually be discovered. The expression of gene networks may depend on factors that are both genetic and environmental. Given the complexity of ASD, what questions should a pediatric doctor or their parents examine when genetic screening is being considered? 42. Describe how neurons transmit information. 43. You are likely to have become acquainted with the effects of local anaesthesia. Although injecting lidococin at the dentist is unpleasant, no injection would be so. Lidococin is a sodium channel inhibitor. A. Explain the absence of pain due to the effect of lidocane on signal reception and transduction. The pain that the drill is caused by cell-level trauma. Broken cells release chemical messengers such as cytokines, serotonin and prostaglandins. The receptors in these trauma messages are called nosiceptors, the activation of which is transmitted to cells specialized in the central nervous system called A and C fibers. B. The nervous system is a network of cells and tissues activated by these chemical messengers. Identify another system that these messengers should activate and support your claim by applying the idea that dynamic homeostasis is maintained by timing and coordination of regulated events.C. Chronic pain often persists after damaged tissue heals. This pain is often accompanied by sterile inflammation with components of the innate immune system, such as macrophages. Refine the model of coordinated response identified in Part B to describe how chemical messengers associated with immune response can cause chronic pain. Unlike local anaesthesia, general anaesthesia prevents signal transmission throughout the central nervous system and brain. Although the patient is unconscious, the peripheral nervous system continues to support the signal to other systems, such as the heart and lungs. The explanation may be that the central nervous system and peripheral nervous system signal are separated and that the latter works without cognitive integration (thought of) as the name autonomous means. The respiratory center, which provides autonomous breathing control, is part of the medulla oblongata. D. Create a visual representation of a system consisting only of the cortex, medulla oblongata, heart and lungs. The arrow keys are used to describe the flow of information. Consider holding your breath when creating your representation. Think about why you always stop holding your breath in the end. Consider holding your heart. Experimental data on the voluntary heart rate management of people practicing yoga have been reported (Raghavendra et al., International Journal of Yoga, 6, 2013; Telles et al., Integrative Physiological and Behavioral Science, 39, 2004).E. Analyze the data provided in the following circulating draft, a process dominated by the autonomic nervous system, the rabbit's two ears (after blessing Neuroscience trends, 20, 1997) in terms of cognitive integration of the stimulus response provided by rabbit contact. Rabbit.