DIRECTORATE OF SCHOOL EDUCATION
TAMILNADU

12NPCB15 (2023-24)	NEET PRACTICE QUESTIONS (TEST-15)	Class : XII Time : 1.15 hrs Total Marks : 240

Answer key

12th – ZOOLOGY

46. D.

Some organisms are able to maintain homeostasis by physiological means which ensures constant body temperature, ionic / osmotic balance. (E.g) Birds, mammals and a few lower vertebrate and invertebrate species

Most animals cannot maintain a constant internal environment. Their body temperature changes with the ambient temperature. (E.g) In aquatic animals like fishes, the osmotic concentration of the body fluids changes with that of the ambient water osmotic concentration.

Partial regulator: It is a theoretical concept that defines animals capable of regulating only up to a certain limit, beyond which they conform to changes in the environment. There are no animals that belong to this category.

47. C. The formula of exponential growth is

dN/dt = rN where

dN/dt - is the rate of change in population size

r - is the biotic potential and

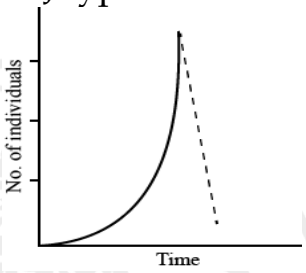
N - is the population size.

48. C. The age pyramids for human population generally shows age distribution of males and females in

combined diagram

At top- heavy population pyramid with higher proportion in older age groups indicates a declining
population.

49. D. Its population growth curve is of J-type



During a rainy season food water etc. will found in a large quantity so number of insects will increase
fast. But after the rain food and water will not be obtained in adequate quantity. So, insects will die very fast.

50.B. Gene flow is the spread of genes through populations as effected by movements of individual and their propagules, e.g., seeds spores etc. Gene flow ensures that all populations of a given species share a common gene pool. i.e., it reduces difference between populations. The interruption of gene flow between populations is a prerequisite for the formation of new species.

52. D. If an organism is living as a parasite, it must have adhesive organs for its attachment to the host. Digestive system is not needed since they can absorb the nutrients directly through their skin. there is no need of sense organs as they are completely dependent on the host and everything is available. But they must have a high reproductive ability since there are chances that everyone won't survive.

53. C. Allen's rule states that in a warm-blooded animal species having distinct geographic population, the limbs, ears and other appendages of the animals living in cold climates tend to be shorter than in animals of the same species living in warm climates.

54. A). Cerebrum plays an important role in processing and comprehension of language. The Broca's area is for
language processing and Wernicke's area is for language comprehension.

55. D). The medulla oblongata contains centers that control several visceral functions, such as breathing, heart and
blood vessel activity, swallowing, vomiting and digestion.

56. A). Dendrites collect impulses and carry them toward the nerve cell bodies. Axons then pick up the
integrity of the signal and speeds transmission along the axon.

57. C). In non-myelinated nerve fibres, the ionic changes are repeated over the membrane all along the length of the fibre.
So, the action potential flows all along the membrane over the entire length of the fibre. But in myelinated fibres, the ionic changes and the consequent depolarisation can take place only at the nodes of Ranvier free from myelin sheath, because the myelin sheath between the nodes insulates the fibre and prevents its depolarisation. So, the action potential in effect jumps from one node to the next. This is called saltatory conduction of nerve impulses. Because of this, nerve impulses do not have to run all along the myelinated nerve fibre

58. B). The nerve impulse is generated due to the sodium-potassium pump. The movement of the ions inside and outside the membrane leads to the generation of the nerve impulse. The impulse starts from the movement of sodium ions inside the cell and ends with the movement of the potassium ions outside the cells.

59. D). The motor neuron's cell body is located in gray matter in the ventrolateral horn, and its long axon leaves the cord via the ventral root and continues on to a muscle where it makes a neuromuscular junction.

60. A). The blood is supplied into visceral organs by both SNS (sympathetic nervous system) and PNS (parasympathetic nervous system) involuntarily. The sympathetic fibres increase the rate and force of heart beat, constrict most blood vessels and raise the arterial blood pressure. The parasympathetic fibres decrease the rate and force of heart beat, dilate many blood vessels and lower the arterial blood pressure.

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TAMILNADU

11NPCB15 (2023-24)	NEET PRACTICE QUESTIONS (TEST-15)	Class : XI Time : 1.15 hrs Total Marks : 240

Answer key

11th – ZOOLOGY

46. A). Cerebrum plays an important role in processing and comprehension of language. The Broca's area is for language processing and Wernicke's area is for language comprehension.

47. A). During stress condition, stimulation of the sympathetic nerves to adrenal medulla causes large quantities of adrenaline to be released into the blood circulation and then this hormone is carried to the specific tissues of the body where it produces its effect e.g., increase in heart beat.

48. D). The medulla oblongata contains centers that control several visceral functions, such as breathing, heart and blood vessel activity, swallowing, vomiting and digestion.

49. A). Dendrites collect impulses and carry them toward the nerve cell bodies. Axons then pick up the integrity of the signal and speeds transmission along the axon.

50. B). The myelinated nerve fibres are enveloped with Schwann cells, which form a myelin sheath around the axon. The gaps between two adjacent myelin sheaths are called nodes of Ranvier. This provides faster transmission of electrical impulses through axon

51. C). In non-myelinated nerve fibres, the ionic changes are repeated over the membrane all along the length of the fibre.

So, the action potential flows all along the membrane over the entire length of the fibre. But in myelinated fibres, the ionic changes and the consequent depolarisation can take place only at the nodes of Ranvier free from myelin sheath, because the myelin sheath between the nodes insulates the fibre and prevents its depolarisation. So, the action potential in effect jumps from one node to the next. This is called saltatory conduction of nerve impulses. Because of this, nerve impulses do not have to run all along the myelinated nerve fibre

52. A). Vagus nerve does not affect tongue movements. It is a mixed cranial nerve, controlling the gut, ventilatory system and heart muscle movement. Movement of the tongue is controlled by hypoglossal nerve as it innervates the muscles of the tongue

53. D). Neurotransmitters are chemical messengers that mediate the signals from one cell to the other through synaptic vesicles and these signals are received by the receptors of the receptor cell. Some examples of neurotransmitters are acetylcholine, adrenaline, noradrenaline, glycine, dopamine.

54. D). The nerve impulses are transmitted in single direction. The main reason for unidirectional transmission is the release of neurotransmitters. These transmitters are not secreted by the smaller extensions called the dendrites. This causes the movement of the impulse in one direction from the axon of one neuron to the dendron of the other neuron.

55. B). The nerve impulse is generated due to the sodium-potassium pump. The movement of the ions inside and outside the membrane leads to the generation of the nerve impulse. The impulse starts from the movement of sodium ions inside the cell and ends with the movement of the potassium ions outside the cells.

56. B). Neurons consist of a cell body or cyton known as the Perikaryon. The cell body contain nucleus, an axon which is a branching fibre and dendrites. Dendrites are the branched projections of a neuron, that act to propagate the electrochemical stimulation received from other neural cells to the cell body or soma of the neuron from which the dendrites project

57. C). Assertion is true but the Reason is false.

58. D). Cell body of a nerve cell contains basophilic granules called Nissl's granules. These granules appear to be cisternae of rough endoplasmic reticulum with numerous attached and free ribosomes. They probably synthesis proteins for the cell.

59. **D).** The motor neuron's cell body is located in gray matter in the ventrolateral horn, and its long axon leaves the cord via the ventral root and continues on to a muscle where it makes a neuromuscular junction.

60. A). The blood is supplied into visceral organs by both SNS (sympathetic nervous system) and PNS (parasympathetic nervous system) involuntarily. The sympathetic fibres increase the rate and force of heart beat, constrict most blood vessels and raise the arterial blood pressure. The parasympathetic fibres decrease the rate and force of heart beat, dilate many blood vessels and lower the arterial blood pressure.