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? Unit 3: Biological Bases of Behavior 3B: The Brain

1. Lesion- Tissue destruction; a brain lesion is a naturally or experimentally caused destruction of brain tissue.
2. Electroencephalogram (EEG)- An amplified recording of the waves of electrical activity that sweep across the brain's surface. These waves are measured by electrodes placed on the scalp.
3. Computed Tomography (CT)- Series of X-ray photographs taken from different angles and combined by computer into a composite representation of a slice through the body also known as CAT scans. .
4. Positron Emission Tomography (PET)- A visual display of brain activity that detects where a radioactive form of glucose goes while the brain performs a given task.
5. Magnetic Resonance Imaging (MRI)- A technique that uses magnetic fields and radio waves to produce computer-generated images of soft tissue. MRI scans show brain anatomy.
6. Functional MRI (fMRI)- A technique for revealing bloodflow and, therefore, brain activity by comparing successive MRI scans. fMRI scans show brain function.
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Brainstem- The oldest part and central core of the brain, beginning where the spinal cord swells as it enters the skull; the brainstem is responsible for automatic survival functions.

8. Medulla- The base of the brainstem; controls heartbeat and breathing.
9. Reticular Formation- A nerve network in the brainstem that plays an important role in controlling arousal.
10. Thalamus- The brain's sensory switchboard, located on top of the brainstem; it directs messages to the sensory receiving areas in the cortex and transmits replies to the cerebellum and medulla.
11. Cerebellum- the "little brain" at the rear of the brainstem; functions include processing sensory input and coordinating movement output and balance.
12. Limbic

System- Doughnut-shaped neural system located below the cerebral hemispheres; associated with emotions and drives, 13. Amygdala- Two lima bean-sized neural clusters in the limbic system; linked to emotion. 14. Hypothalamus- A neural structure lying below the thalamus; it directs several maintenance activities, helps govern the endocrine system via the pituitary gland, and is linked to emotion and reward. 5. Cerebral Cortex- The intricate fabric of interconnected neural cells covering the cerebral hemispheres; the body's ultimate control and information-processing center. 16. Glial Cells- Cells in the nervous system that support, nourish, and protect neurons. 17. Frontal Lobes- Portion of the cerebral cortex lying just behind the forehead; involved in speaking and muscle movements and in making plans and judgements. 18.

Parietal Lobes- Portion of the cerebral cortex lying at the top of the head and toward the rear; receives sensory input for touch and body position. 19.

Occipital Lobes- Portion of the cerebral cortex lying at the back of the head; includes areas that receive information from the visual fields. 20. Temporal

Lobes- Portion of the cerebral cortex lying roughly above the ears; includes the auditory areas, each receiving information primarily from the opposite ear. 21. Motor Cortex- An area at the rear of the frontal lobes that controls voluntary movements. 2. Sensory Cortex- Area at the front of the parietal lobes that registers and processes body touch and movement sensations.

23. Association Areas- Areas of the cerebral cortex that are not involved in primary motor or sensory functions; rather, they are involved in higher mental functions such as learning, remembering, thinking, and speaking. 24.

Aphasia- Impairment of language, usually caused by left hemisphere damage either to Broca's area or to the Wernicke's area. 25.

Broca's Area- Controls language expression - an area, usually in the left frontal lobe, that directs the muscle movements involved in speech. 26.

Wernicke's Area- Controls language reception - a brain area involved in language comprehension and expression; usually in the left temporal lobe.

27. Plasticity- The brain's ability to change especially during childhood, by reorganizing after damage or by building new pathways based on experience. 28. Neurogenesis- The formation of new neurons. 29.

Corpus Callosum- The large band of neural fibers connecting the two brain hemispheres and carrying messages between them. 30. Split Brain- A condition from surgery that isolates the brain's two hemispheres by cutting the fibers. 31. Consciousness- Our awareness of ourselves and our environment. 32. Cognitive Neuroscience- The interdisciplinary study of the brain activity linked with cognition. 33. Dual Processing- The principle that information is often simultaneously processed on separate conscious and unconscious tracks.