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**Question Number 1**

Ten basic parts of vertebrate CNS are stated as follows (Swanson, 2000):

1. Dorsal Cerebral Cortex or Pallium
2. Ventral or Basal Cerebral Nuclei or ‘Ganglia’
3. Dorsal Thalamus
4. Ventral Hypothalamus
5. Dorsal Tectum
6. Ventral Tegmentum
7. Cerebellum
8. Pons
9. Medulla
10. Spinal Cord

**Question Number 2**

Following are the nine principles of the Nervous System and their significance for understanding the Neuroanatomy (Coghill, 2015):

1. It produces the locomotion inside the perceptual world created by the brain.
2. The symbolic functioning of the nervous system is neuroplasticity.
3. The brain circuits are mostly crossed.
4. The functions of CNS are on multiple levels.
5. The brain is symmetrical as well as asymmetrical.
6. The system of the brain is organized in a parallel and hierarchical manner.
7. The existence of motor and sensory divisions in the Nervous System.
8. The nervous system functions through excitation, juxtaposing and inhibition.
9. Brain functions are distributed and localized.

**Question Number 3**

Animals are used to study the behavior of the human mind because they exhibit similar behavior as that of humans. Human beings are hard to observe as a group, so researchers conduct their studies on the human brain so that they can infer the supposed behavior of humans through animal demonstration in groups. This process is hard in measuring human behavior because their mind comes under pressure due to various ongoing procedures which in turn destroys the resulting efficacy (Barnett, 2017).

Animals can be used to comprehend the psychology of human beings and their emotional and physical responses. This phenomenon is known as homology, as such in studies, animals which are closely associated with human beings in physical and behavioral factors, they also share the same blueprint of genetics. For instance, chimpanzees or monkeys are closely linked to the genetics of humans, so they are homologically similar.

Moreover, some experiments require strict controls, so for this reason animals are tested to observe human behavior, as humans cannot survive the critical experiment conditions. Lastly, there is lesser ethical consideration concerning animal studies than human studies.

**Question Number 4**

Aristotle's contribution towards psychology is that he stated that the brain is the faculty of body or structure, such that the brain is distinguishing the part of the body (Swanson, 2012). It is the most basic and uncomplicated relationship between the human mind and body. He stated that it is unnecessary for assuming that mind and body are one entity. He further exemplified this concept with the example of wax and its shape, as it is not necessary for asking the oneness of wax and the shape in which it is formed.

Likewise, Aristotle perceived the mind and body as inseparable, but at the same time unique from each other. The Aristotelian forms are the properties and nature of the existing things which are embodied within each other. Form this viewpoint, Aristotle explained the relationship between mind-body that a mind is a form of the body. This makes the mind as the property of the body or structure. His contributions to psychology are more than just the theory about mind and body. He was of the view that body and mind are inseparable from each other, such that they both exist within each other.

**Question Number 5**

The localization of functions in the brain means that the brain functions, e.g., memory, learning, language, talking etc. is located separately in the brain. This idea has been supported through various neuroimaging researches and case studies. There are four areas in the brain which are involved in the functioning of the human body, i.e., motor, somatosensory, auditory and visual (Baars & Gage, 2010). They are described as below:

1. Motor cortex

This is located in the frontal lobe and is related to the voluntary movements. This area sends signals to the body muscles. In response, muscles are contracted or relaxed. The region of this area is logically arranged in order, such that the region which controls the movement of the finger is laced next to the region which controls the movement of arms and hands.

1. Somatosensory cortex

It is located in the parietal lobe, and when touch stimulus, pressure or pain is exerted on the skin it sends signals through sensory information to this part of the brain. However various part of the body sends signals to different parts of the somatosensory area. This area is adaptable to the changes of the body sensations.

1. Auditory cortex

It is located towards the temporal lobe and this part analyses and processes the acoustic or auditory information. This works in cross directions, such that the information coming in right ear will go towards left hemisphere and the information coming through left ear will go toward right hemisphere. Primary area is involved with the sound features, like, volume, pitch and tempo.

1. Visual cortex

It is located in the occipital lobe and receives the visual information and then processes this information into visual graphics. This works in a cross-sectional way, for instance, the visual field on the right-hand side is processed in the left side of the hemisphere, and left-hand is processed toward the right hemisphere. This area contains various parts in the cortex which processes information based on distinguishing shape, colors, and movement.

**Question Number 6**

The size principle is related to muscle contraction. Henneman stated that under pressure, the motor units are converted to the largest units from smallest (Guezennec & Krzentowski, 2017). It is elaborated as such through this example that low-force, slow-twitch, and which are fatigue-resistant muscle fibers get activated earlier than the high-force, fast-twitch, and muscle fibers of lower fatigue-resistant. The stronger the muscle contraction, the higher will be the recruitment to astronomical units.

**References**

Swanson, L. W. (2000). What is the brain?. Trends in Neurosciences, 23(11), 519-527.

Coghill, G. E. (2015). Anatomy and the Problem of Behaviour. Cambridge University Press.

Barnett, S. A. (2017). The rat: A study in behavior. Routledge.

Swanson, L. W. (2012). Brain architecture: understanding the basic plan. Oxford University Press.

Baars, B. J., & Gage, N. M. (2010). *Cognition, brain, and consciousness: Introduction to cognitive neuroscience*. Academic Press.

Guezennec, C. Y., & Krzentowski, R. (2017). Muscle Physiology in Athletes. Muscle Injuries in Sports Athletes (pp. 3-18). Springer, Cham.