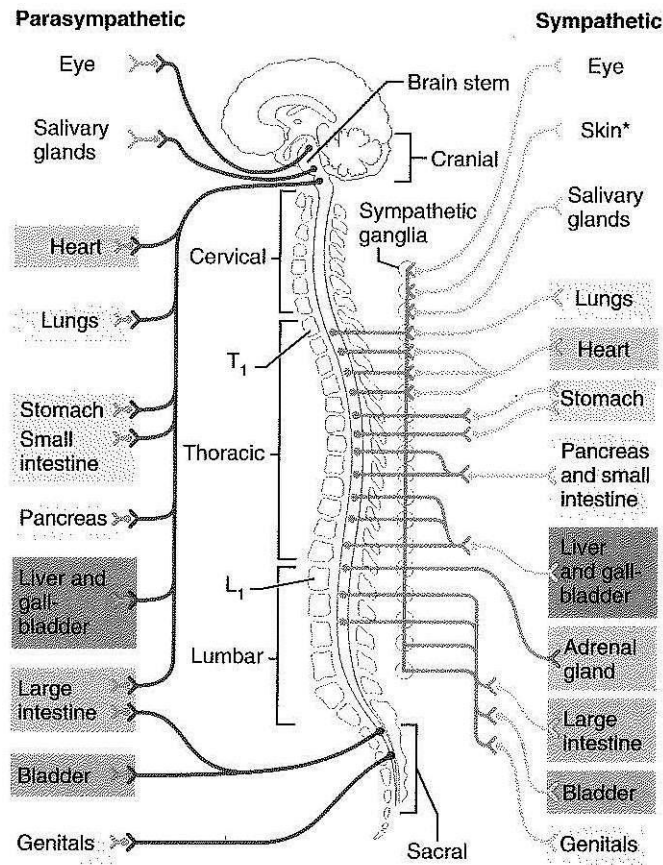


Anatomical and Functional divisions.

1. Draw a flow chart to summarize the Anatomical and Functional divisions of the Nervous System

2. The Figure below provides an overview of the subdivisions of the autonomic nervous system. Using the diagram as reference briefly describe how the parasympathetic and sympathetic subdivisions differ both in terms of their anatomy and physiology

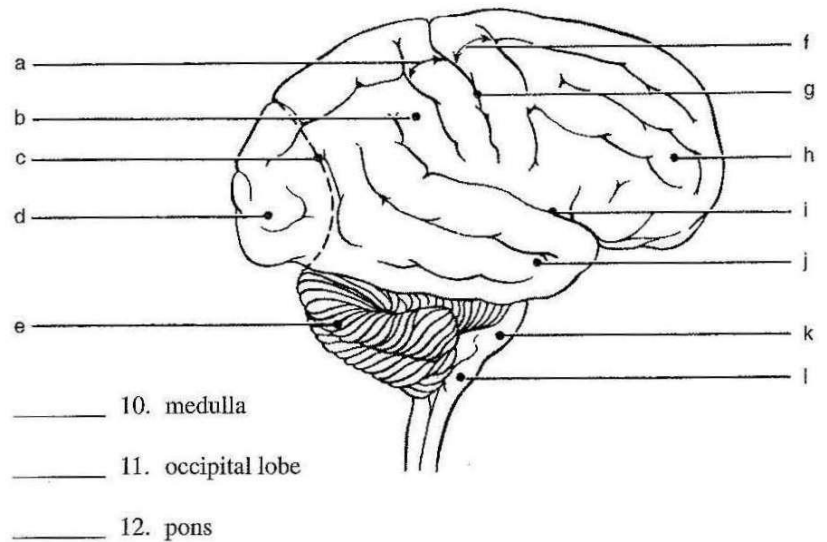


3. Name the neurotransmitters and their receptors most commonly found in the ANS.

4. Anatomy of brain

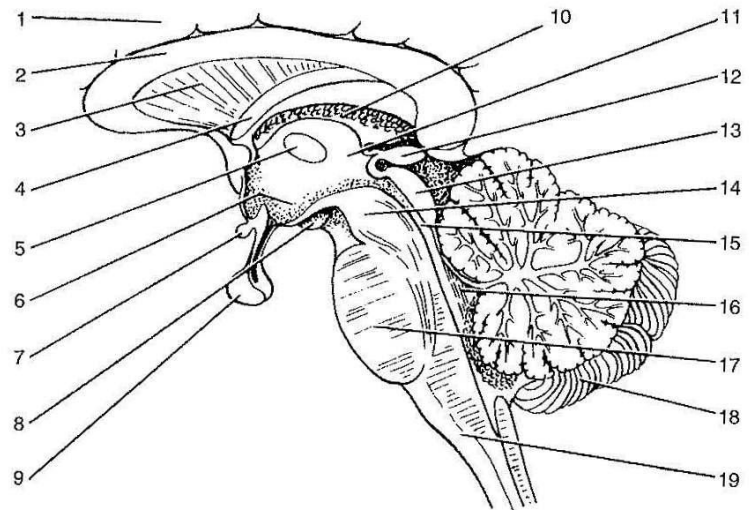
Match the letters on the diagram of the human brain (right lateral view) to the appropriate terms listed at the left.

- _____ 1. frontal lobe
- _____ 2. parietal lobe
- _____ 3. temporal lobe
- _____ 4. precentral gyrus
- _____ 5. parieto-occipital sulcus
- _____ 6. postcentral gyrus
- _____ 7. lateral sulcus
- _____ 8. central sulcus
- _____ 9. cerebellum



Identify the structures on the following sagittal view of the human brain stem and diencephalon by matching the numbered areas to the proper terms in the list.

- _____ a. cerebellum
- _____ b. cerebral aqueduct
- _____ c. (small part of) cerebral hemisphere
- _____ d. cerebral peduncle
- _____ e. choroid plexus
- _____ f. corpora quadrigemina
- _____ g. corpus callosum
- _____ h. fornix
- _____ i. fourth ventricle
- _____ j. hypothalamus
- _____ k. intermediate mass
- _____ l. mammillary bodies
- _____ m. medulla oblongata



- _____ n. optic chiasma
- _____ o. pineal gland
- _____ p. pituitary gland
- _____ q. pons
- _____ r. septum pellucidum
- _____ s. thalamus

5. Pair the structure with the description:

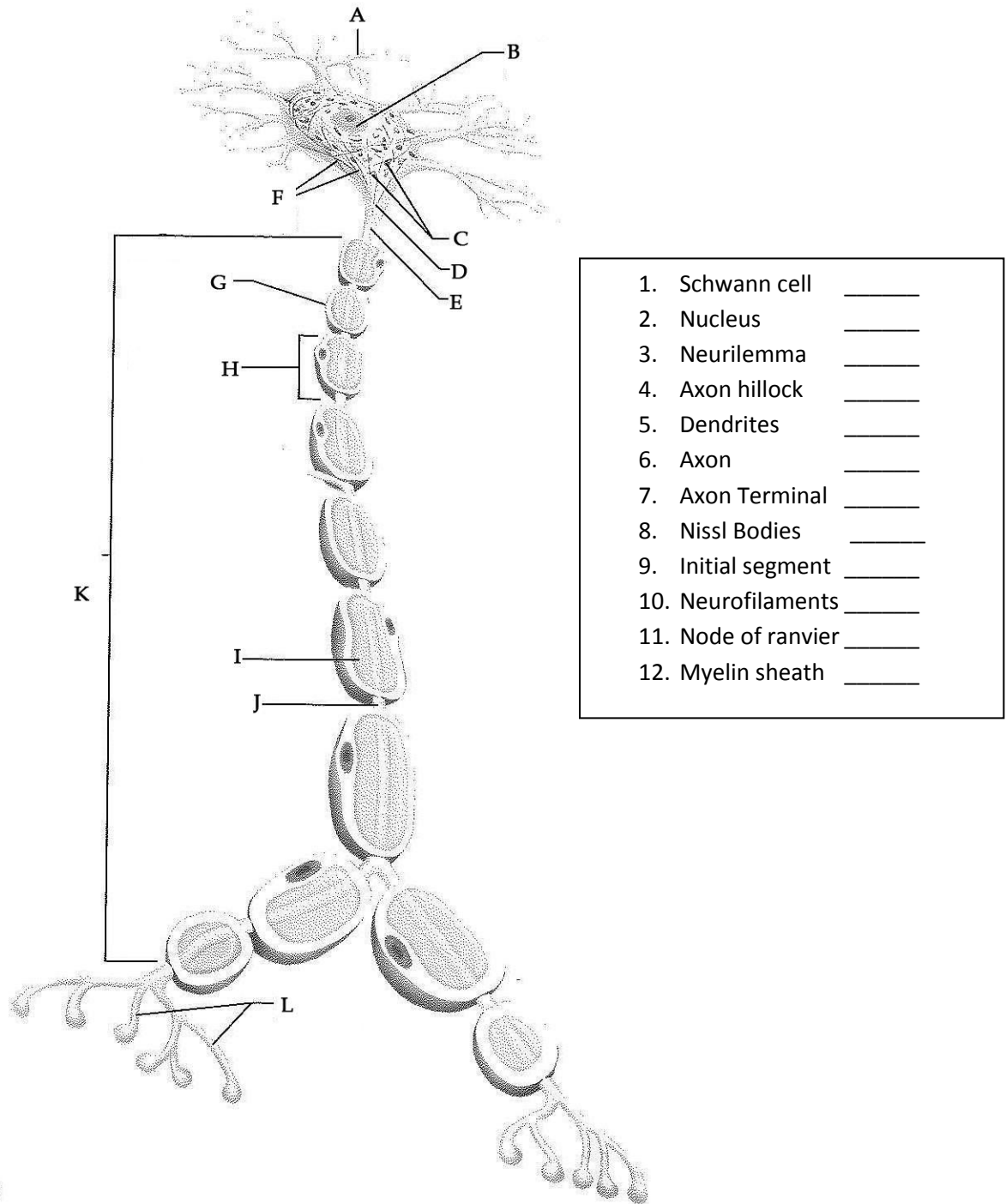
Name of Structure:

- a. Medulla oblongata
- b. Pons
- c. Midbrain (corpora quadrigemina, superior
And inferior colliculi)
- d. Hypothalamus
- e. Thalamus
- f. Left cerebral hemisphere
- g. Right cerebral hemisphere
- h. Frontal lobe
- i. Parietal lobe
- j. Temporal lobe
- k. Occipital lobe
- l. Corpus callosum & anterior commissure

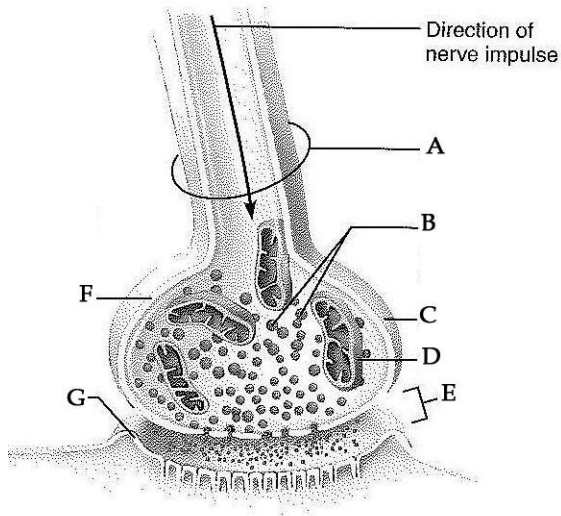
Description:

- i. Crude perception of sensations & emotions and relaying afferent/efferent impulses to/from the cerebrum
- ii. Perception of sensations of touch, temp., taste & body position (kinesthetic sensation)
- iii. Filter and relay visual (superior colliculi) & auditory stimuli (inferior colliculi); reflexive control of eye movement, focusing lens and pupil diameter
- iv. Reflexive, involuntary control of heart, breathing & blood vessels
- v. Dominates in non-speech sounds (melodies, laughing, etc.), in spatial perception & in holistic, artistic & emotional concepts
- vi. Communication between the two cerebral hemispheres
- vii. Perception of auditory sensations & related speech centers
- viii. Subconscious control & coordination of voluntary muscle
- ix. Dominates in speech sounds & in understanding sequential, rational & analytical concepts
- x. Timing of subconscious breathing
- xi. Perception of visual sensations
- xii. Control of ANS & pituitary gland and, thereby, regulates involuntary body functions, homeostasis
- xiii. Voluntary control over muscles, learning, planning, higher psychological functions

6. Anatomy of the neuron. Identify the structures in the figure below:
A TYPICAL MOTOR NEURON



7. Anatomy of the synapse. Identify the structures in the figure below:
THE SYNAPTIC CLEFT



- | | |
|---------------------------|-------|
| 1. Presynaptic membrane | _____ |
| 2. Axon | _____ |
| 3. Synaptic cleft | _____ |
| 4. Synaptic vesicle | _____ |
| 5. Post synaptic membrane | _____ |
| 6. Mitochondrion | _____ |
| 7. Axon terminal | _____ |

8. Define action potential and describe the main events that occur during an action potential

9. What is the role of myelin in signal transduction?

10. What is the role of the chemical synapse and why is it so important?