

## Division B Anatomy Practice Test - Nervous & Integumentary Systems

Answer Key Created by vennowsah

1. Identify the parts of the brain based on the diagram to the right and write the names of the parts on the line next to the corresponding letter.

Diagram 1:

- a. Cingulate gyrus
- b. Septum
- c. Basal ganglia
- d. Fornix
- e. Thalamus
- f. Locus coeruleus
- g. Raphe nuclei
- h. Hippocampus
- i. Amygdala
- j. Pituitary
- k. Hypothalamus
- l. Prefrontal cortex

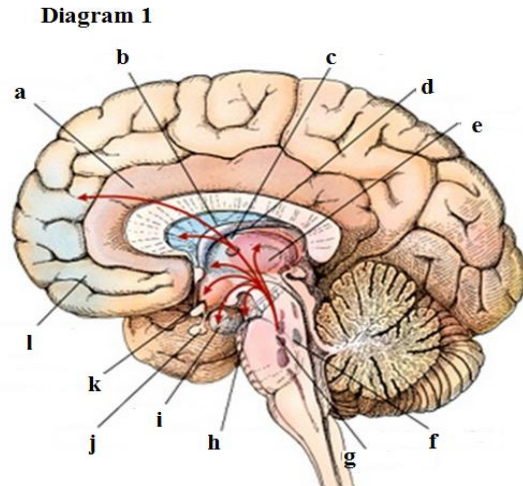
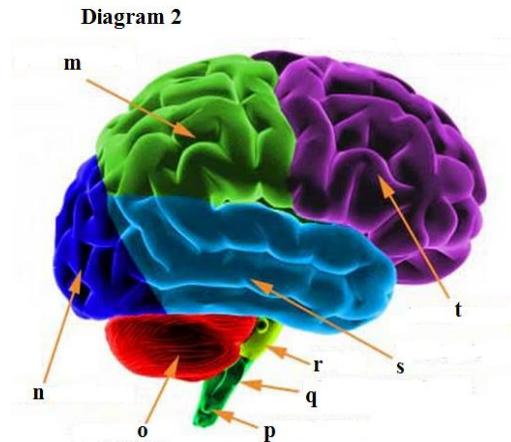


Diagram 2:

- m. Parietal lobe
- n. Occipital lobe
- o. Cerebellum
- p. Spinal cord
- q. Medulla oblongata
- r. Pons
- s. Temporal lobe
- t. Frontal lobe



2. What are the four types of brainwave patterns and their Hz?

Alpha (8-13.9 Hz); Beta (14-30 Hz); Delta (0.1-3.9 Hz); and Theta (4-7.9 Hz)

3. What is cerebrospinal fluid (CSF), and where is it produced?

Cerebrospinal fluid is a solution of glucose, protein, vitamins, and other nutrients that bathes the entire nervous system and feeds nerve cells energy. It is produced in clusters of thin-walled capillaries known as choroid plexuses.

4. What is the blood-brain barrier, and what does it consist of?

The blood-brain barrier is a barrier that restricts the entry of certain blood molecules into the CNS. It consists of intercellular connections between endothelial cells of capillaries and processes of astrocytes that surround them.

5. Which part of the brain helps regulate balance, gait, and posture?

The cerebellum

6. The shallow grooves in the brain are called the sulci, and the deep grooves in the brain are called the fissures.

7. What is the function of the medulla?

The medulla controls heartbeat and breathing, the basic needs for survival.

8. The Limbic System influences subconscious, instinctive behavior.

9. What does the mamillary body do?

The mamillary body acts like a relay station, transmitting info mainly between the fornix and thalamus. It is also involved in memory processes.

10. What are photoreceptors? What do they do?

Photoreceptors are nerve cells that are sensitive to light. When activated, they send signals to the brain that allows vision.

11. Explain the process of hearing.

*\*Answers may vary*

The outer ear collects acoustic energy, and directs it through the ear canal into the eardrum, where it vibrates, setting the hammer, anvil, and stirrup bones into motion. The stirrup then vibrates, setting in motion the fluid of the cochlea, which triggers sensory hair cells of the ear to send impulses to the brain via the auditory nerve.

12. What are the three main parts of a neuron?

Dendrite, axon, and soma/cell body.

13. When a neuron is at its resting potential, it is polarized.

14. How does nicotine affect the nervous system?

Nicotine increases heart and blood pressure, respiration, and stimulation in the CNS. It can also cause anxiety, depression, headaches, and fatigue.

15. What are the effects of marijuana on the nervous system?

Effects of marijuana include euphoria, impairment of judgment and concentration, and occasionally hallucinations.

16. What are neuroglial cells? What do they do?

Neuroglial cells support neurons by holding them in place and supplying them with oxygen. They also protect neurons from pathogens and remove dead neurons.

17. What are motor nerve tracts?

Motor nerve tracts are large fiber bundles that carry instructions for movements down to the spinal cord and across the lower brain stem.

18. What are fascicles?

Fascicles are a group of axons from nerve cells with similar functions, grouped together as they pass from body to brain.

19. What virus is shingles caused by?

Chicken pox virus - Varicella zoster

20. List the symptoms and treatments for the following disorders:

*\*Answers may vary*

**Alzheimer 's disease:**

Symptoms: Worsening of memory, speech, writing, judgment, & thinking

Treatment: Drugs- Cholinesterase inhibitors/Memantine, exercise, and nutrition

**Multiple Sclerosis:**

Symptoms: Weakness in limbs, loss of vision, blurred vision, pain in parts of body

Treatment: Corticosteroids, plasma exchange,

**Glaucoma:**

Symptoms: Eye pain, headaches, nausea, vomiting, visual blurring

Treatment: Eye drops, drugs, surgery

21. All layers of the epidermis are composed of stratified squamous epithelial tissue.

22. What three layers of tissue is the integument composed of?

Epidermis, dermis, and hypodermis

23. Skin cells produce keratin, a fibrous protein that's an important component of the skin and the only component of hair and nails.

24. What are the five layers of the epidermis?

Stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, and stratum basale

25. What is the stratum corneum? What is it composed of?

The stratum corneum is the outermost sheet of the epidermis. It is only about 25 to 30 cells thick, and composed entirely of corneocytes, or cornified keratinocytes. Its uppermost surface is covered with a waxy waterproof coating of sebum that protects the entire body.

26. When do apocrine sweat glands start to develop?

Apocrine sweat glands start to develop during puberty deep in the hair follicles in the armpits and groin.

27. The two main types of skin glands are sweat glands and oil glands.

28. List three functions of the integument.

Protection, thermoregulation, and water balance.

29. What are papillae?

Papillae are finger-like projections in the dermis that extends from the dermis to the epidermis. At the surface of the hands and feet, the papillae projecting into the epidermis form friction ridges or fingerprints if it's on a finger.

30. What is the reticular region and what is it composed of?

The reticular region is the layer of the dermis underneath the papillary region and is usually much thicker. It is composed of dense connective tissue and collagenous, elastic, and reticular fibers that weave throughout it.

31. What is the lunula?

The lunula is a white, half moon shaped area at the bottom of your nail that is the area of cell growth.

32. What type of tissue is the hypodermis (subcutaneous layer) mainly composed of?

The hypodermis is mainly composed of adipose tissue (fatty tissue).

33. What is dermatitis? What causes it?

Dermatitis is the inflammation of the skin that takes in form of broken skin that itches and burns. It can have many causes, including infection, insect bites, allergies, sunburn, or irritation from chemicals.

34. What characterizes melanoma?

Change in existing mole such as scaliness, itching, oozing, or bleeding, or the development of a new pigmented or unusual-looking growth on your skin. Unusual moles such as irregular shapes, borders, or color may also indicate melanoma.

35. Label the parts of the skin based on the diagram on the right

- A. Squamous cells
- B. Basal cells
- C. Melanocyte
- D. Sweat gland
- E. Lymph vessel
- F. Fat cells
- G. Blood vessel
- H. Hair follicle
- I. Sweat gland
- J. Subcutis
- K. Dermis
- L. Epidermis

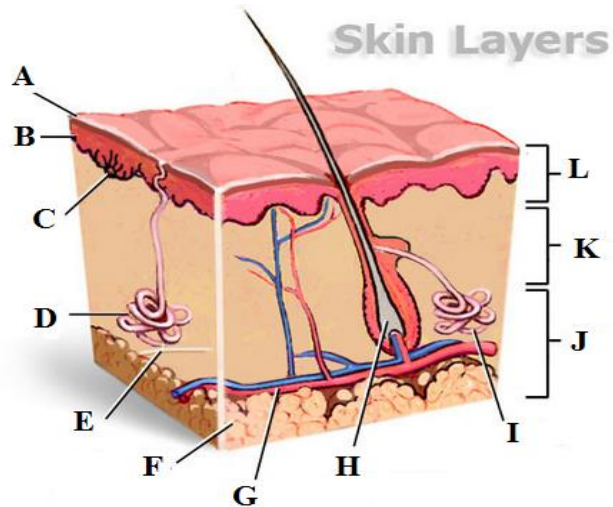


Photo Sources:

Brain Diagram 1 – [www.watchingtheworldwakeup.blogspot.com](http://www.watchingtheworldwakeup.blogspot.com)

Brain Diagram 2 – [http://www.brainhealthandpuzzles.com/diagram\\_of\\_brain.html](http://www.brainhealthandpuzzles.com/diagram_of_brain.html)

Skin Diagram – [http://www.heartspring.net/art\\_skin\\_layers\\_diagram.html](http://www.heartspring.net/art_skin_layers_diagram.html)