

Name

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Class

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Date

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**TB1 Chapter 02: Essay**

1. Discuss some of the most recent discoveries that biological psychologists have made about the links between human biology and behavior and mind.

*ANSWER:*

2. Describe the focus of the field of biological psychology, and discuss the notion that we are all biopsychosocial systems.

*ANSWER:*

3. Explain how neuroplasticity of the brain changes throughout life. When is it considered the strongest?

*ANSWER:*

4. Identify the parts of the neuron and describe their functions; then draw a diagram to demonstrate how an action potential would travel into and through a neuron.

*ANSWER:*

5. Describe how an action potential moves down a neuron.

*ANSWER:*

6. Explain what we mean when we say a neuron's response is an all-or-none response.

*ANSWER:*

7. Describe the process by which neurons communicate with other neurons.

*ANSWER:*

8. Identify some of the more common neurotransmitters and describe their roles in the body and the effects they can have when they malfunction.

*ANSWER:*

9. Compare and contrast the action of agonist and antagonist drugs and other chemicals. Explain how each of these affects the influence of neurotransmitters.

*ANSWER:*

10. Diagram the divisions and subdivisions of the nervous system. Make sure to explain the responsibilities and functions of each.

*ANSWER:*

11. While crossing the street, Diego was nearly hit by a van that missed a stop sign. Describe the response of his sympathetic and parasympathetic nervous systems during and after the experience.

*ANSWER:*

12. Compare and contrast neurotransmitters and hormones, by noting where they come from, how they travel through the body, their roles and responsibilities, and how and for how long they influence us.

*ANSWER:*

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13. Describe how the endocrine system and the nervous system influence one another.

*ANSWER:*

14. Identify the different ways in which brain lesions may occur, and describe how scientists use selective brain lesioning.

*ANSWER:*

15. Compare and contrast the use of an EEG and an MEG for observing mental activity.

*ANSWER:*

16. Describe how MRI brain scans are used to reveal brain structure.

*ANSWER:*

17. Compare and contrast the uses of MRI and fMRI brain scans.

*ANSWER:*

18. Describe the location and roles of the hindbrain, midbrain, and forebrain, and outline the major brain structures associated with each region.

*ANSWER:*

19. Describe the structure, function, and unique cross-wiring of the brainstem, the brain's innermost region.

*ANSWER:*

20. Describe the specific functions of the brain's thalamus, which sits atop the brainstem.

*ANSWER:*

21. Describe the structure and function of the reticular formation, which lies inside the brainstem.

*ANSWER:*

22. Describe the specific functions of the brain's cerebellum, which extends from the rear of the brainstem.

*ANSWER:*

23. Describe how damage to specific structures in your limbic system would likely affect your experience of (a) emotions such as fear and anger, (b) motives such as the thirst and sex drives, and (c) memories such as recall of high school classmates.

*ANSWER:*

24. Compare and contrast the four lobes of the brain. Where are they located, and what are their functions?

*ANSWER:*

25. After suffering a head injury while playing soccer, Jennifer says that she remembers what her father looks like, and she can accurately recall many of her father's distinctive facial features. However, when she is shown

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pictures of her father, Jennifer is unable to recognize who it is, even though she can see clearly. Use your understanding of the functioning brain to account for Jennifer's strange pattern of experience.

*ANSWER:*

26. A series of strokes has damaged regions of Mr. Sklar's temporal lobes. He can still clearly hear what others are saying, but he now has trouble comprehending spoken language. Use your understanding of the brain's association areas to explain why the stroke damage could leave Mr. Sklar's hearing unaffected while interfering with his ability to identify the meaning of spoken words.

*ANSWER:*

27. Jason and Brandon are studying together for their psychology class. Jason says, "Some people believe the myth that we use only 10 percent of our brain, but we actually use all of our brain." Explain why people believe this myth and give Jason's explanation for why it is a myth.

*ANSWER:*

28. Janet was in an automobile accident as a child but seems to have fully recovered as an adult. Explain the role of neuroplasticity in her recovery.

*ANSWER:*

29. Explain how neuroplasticity may affect the recovery process after a person experiences brain damage.

*ANSWER:*

30. Define neurogenesis, and describe how it may play a role in helping the brain to recover from damage.

*ANSWER:*

31. Describe the role played by the corpus callosum in a normally functioning brain, and discuss what happens when it is severed.

*ANSWER:*

32. Describe how an understanding of both a normally functioning brain and a split brain enables us to better appreciate the fact that most information processing takes place outside of conscious awareness.

*ANSWER:*

33. Compare the independent functions of the brain's right and left hemispheres.

*ANSWER:*

34. Dr. Thomas is a behavior geneticist. How would she explain individual differences among people?

*ANSWER:*

35. As behavior geneticists have found time and time again, most of our traits have complex genetic roots and also interact with our environments. Choose several of the traits that you feel make you unique, and explain in detail how both nature and nurture may have played a role in shaping those traits.

*ANSWER:*

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36. How can twin and adoption studies help researchers gain a better understanding of the influences of nature and nurture? Use specific research findings to illustrate your point.

*ANSWER:*

37. Jon and Jorge are identical twins with two other non-twin siblings: an older brother and a younger sister. Explain how a researcher interested in the influence of heredity and home environments on personality differences might study Jon and Jorge's family.

*ANSWER:*

38. Mr. Gaunt spends most of his time alone because he is shy and becomes anxious at the slightest change of plans. In therapy, he recalled that his childhood was not a happy one, as his mother spent more time going to meetings than with him, and his father also was inattentive because of work responsibilities. He blames both parents for his shyness and anxiety. In light of your understanding of the gene–environment interaction, explain why Mr. Gaunt's complaints about his parents may be somewhat unfair and unhelpful.

*ANSWER:*

39. Sixteen-year-old Max has always been somewhat aggressive. As a young child, he played roughly with the neighborhood children. He has always enjoyed playing with fighting action figures and wrestling with his father. As a teenager, he spends most of his time alone, playing violent video games. He also gets into fights with classmates and constantly argues with his parents. Explain how heredity and environment may have interacted to produce Max's aggressive tendencies.

*ANSWER:*

40. Professor Wong is an evolutionary psychologist. Discuss how he explains human tendencies in terms of natural selection and adaptation.

*ANSWER:*

41. Biological fathers are much less likely than unrelated boyfriends to harm the children with whom they share a home. Use the principles of evolutionary psychology and natural selection to explain why this is so.

*ANSWER:*

42. How do the genetic predispositions we share with our Stone Age ancestors continue to help and protect us today? On the other hand, how are these predispositions mismatched with the modern world in ways that can harm us? Do you feel that understanding these tendencies can help us to embrace or combat them? Why or why not?

*ANSWER:*