SUPPLEMENT 2.5 ACTIVITY: BIOPSYCH BRAINTEASERS (HANDOUT)

SCENARIO #1
Sam’s loving and attentive parents were concerned that although he was an active and bright little boy, Sam was not growing at anywhere near the same rate as other children his age. Family members on both sides were of at least normal height and many were taller than average.

Which brain structure and endocrine organ may be involved in Sam’s case?

SCENARIO #2
The friendship between Randall and his roommate began to deteriorate when Randall discovered that one of Marshall’s favorite pastimes was to play practical jokes on his friends. After a particularly distasteful prank, Marshall promised to be good and asked Randall to shake hands. However, Marshall had an electronic buzzer in his hand. Upon shaking Marshall’s hand, Randall jumped involuntarily much to his chagrin and Marshall’s delight. Randall packaged all of Marshall’s belongings and sent them to Nepal shortly thereafter.

What part of the central nervous system was responsible for Randall’s reflexive action?

SCENARIO #3
As a result of a strange turn of events involving a can of pork and beans, a three-hole paper punch, and a copy of The National Enquirer, Anthony received a blow to the head which caused him to be unable to see anything to the right of whatever he was looking at. An examination indicated that Anthony had suffered no eye damage.

Which lobe of which hemisphere of Anthony’s brain was most likely malfunctioning?

SCENARIO #4
Although Tran had lived in Nebraska for 27 years and considered himself an American, when he visited San Francisco’s ethnic neighborhoods while on vacation, the exotic aromas of Asian cuisine brought back powerful emotional memories of his childhood in Viet Nam.

Which part of his brain was most responsible for the connection of smell to emotion?

SCENARIO #5
One of the problems in Stan and Shirley’s relationship was that Shirley was a “night person” and Stan was a “morning person.” They wondered if love could overcome their daily biological rhythms.

Which brain structure was threatening Stan and Shirley’s future together?
SCENARIO #6
After an operation to relieve epileptic seizures, Felipe was able to function quite normally, if he makes sure that each side of his brain knows what is going on. If he doesn’t, Felipe finds that his left hand literally doesn’t know what his right hand is doing.

Which part of Felipe’s brain was the focus of the operation that would result in this lack of internal communication?

SCENARIO #7
Charita was a rising star in the design world because of her fine and intricate hat designs. She never told anyone that her inspiration came from watching birds build their nests. Charita suspected that both she and the birds had one well-developed brain structure responsible for fine motor movements in common.

Which structure could this be?

SCENARIO #8
In a study of schizophrenia that monitored glucose use of the brains of patients who were having hallucinations (they were hearing nonexistent voices), researchers discovered activity in a particular brain area.

Which technique did the researchers use to monitor brain activity?
In which lobe of the brain did the researchers find activity during the hallucinations?

SCENARIO #9
Sheila answered the phone and heard a female voice wailing loudly. She instantly became aroused for the voice sounded like her sister’s. Could she be in trouble? Does she need help? However, when Sheila checked her phone’s caller identification feature, she recognized the phone number. It belonged to the family down the street whose ten-year-old twins were known to make prank phone calls.

Which branch of Sheila’s nervous system caused her body to become ready for action?

Which branch of Sheila’s nervous system calmed her body down once she recognized that there was no crisis?

SCENARIO #10
Harold was brought to the hospital emergency room after the accident. Although he was breathing, no one was able to arouse him to consciousness. After several days of no change, nurses performed a procedure to check general electrical activity in Harold’s brain. Unfortunately very little brain activity was detected.

Which brain structure kept Harold breathing?

Because Harold was comatose, which brain structure was probably not functioning?

What brain monitoring technique was used on Harold?