AP® PSYCHOLOGY
2016 SCORING GUIDELINES

Question 1

General Considerations

1. Answers must be presented in sentences, and sentences must be cogent enough for the student's meaning to come through. Spelling and grammatical mistakes do not reduce a student's score, but spelling must be close enough that the reader is convinced of the word.
2. Do not score students' notes made on the question section of the booklet. Score only what has been written in the blanks provided in the booklet.
3. Definitions alone will not score, but they may be used to enhance the application.
4. Within a point, a student will not be penalized for misinformation unless it *directly contradicts* correct information that would otherwise have scored a point. A correct application with incorrect definition is not considered a direct contradiction and should score the point.
5. Rubric examples provided for each point are not to be considered exhaustive.
6. A student can score points only if the student clearly conveys what part of the question is being answered. It is possible to infer the part of the question being answered if it is consistent with the order of the question.

Part A: Responses must demonstrate how the concept *helps* Ashley on the drive.

Point 1: Motor Neurons

Student must depict motor neurons enabling Ashley's movement in the context of driving a car.

- Score: "Ashley's motor neurons allow her to press the gas pedal in her car."
- Do NOT score: "Motor neurons help her drive the car."

Point 2: Retinal Disparity

Student must connect the difference between two eyes or retinas (or the images reflected onto each) with the ability to perceive depth while driving.

- Score: "Ashley uses the difference between the images on her two retinas to judge the distance between her car and the car in front of her."
    - Note: Student may imply depth perception by referring to 3-D vision.
    - Note: Student may use the word "disparity" in the answer to convey difference, as long as the context indicates that the student has appropriately used the term.

Point 3: Heuristic

Student must include a specific problem-solving strategy and why Ashley is using it (what problem it solves) on the drive.

- Score: "When Ashley got lost, she decided to call her parents for help."
- Do NOT score: "Ashley called her parents every three hours while she was driving to California."
- Do NOT score: Solutions that appear to be trial and error or algorithm: "When Ashley got lost, she tried mapping her route according to every possible highway to see which one looked fastest."

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Question 1 (continued)

Point 4: Procedural Memory

Student must mention a driving-related skill that is performed with little attention or awareness (e.g., automatically, unconsciously, muscle memory, nondeclarative, well-practiced/learned).

- Score: "Because she has been driving for several years, Ashley can steer and control the speed of her car."
- Do NOT score: cognitive maps/navigation: "Ashley knows the routes to California so well that she can get there while singing along with the radio the whole time."

Part B: Responses must specify a *negative experience* related to Ashley's trip.

Point 5: Circadian Rhythms

Student must reference a specific biological cycle/pattern (e.g., sleep/wake, hormonal, elimination) that leads to a negative experience related to the trip.

- Score: "Because she has to cross different time zones, Ashley will have to drive when she would normally be asleep, putting her at risk for an accident."
    - Note: Student may refer to the disruption of the biological cycle as the negative effect.
- Do NOT score: "Biological clock" (not a specific cycle).
- Do NOT score: Simply getting tired from the long drive (without a reference to the cycle demanding sleep).

Point 6: Conditioned Response

Student must specify reflexive/automatic/involuntary response (implying after acquisition) related to the trip.

- Score: "Ashley is afraid of guardrails."
    - Note: Student may refer to an example of a conditioned response other than the fear of guardrails, as long as it is related to the trip.
- Do NOT score examples of operant conditioning (with voluntary responses): "After her crash, Ashley jerks her steering wheel away from every guardrail she sees."

Point 7: Inattentional Blindness

Student must give an example of a negative effect of not seeing or noticing a specific external object in the visual field because attention is directed elsewhere on the trip.

- Score: "Because she wasn't paying attention, Ashley didn't see the car in front of her, and she rear-ended it."
    - Note: If the visual stimulus is the guardrail, the student does not need to specify a negative effect.

Question 1 (continued)

- Score: "Because she was distracted, Ashley didn't see the guardrail."
    - Note: Assume that the missed object is in the visual field unless the student's language implies otherwise.
- Do NOT score: "Because she was looking at the floor of her car for the map, Ashley didn't see the guardrail."

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ANSWER PAGE FOR QUESTION 1

Motor neurons are the neurons responsible for muscle movement in limbs. These neurons helped Ashley get to California by sending signals to her muscles which allowed her to move her hands to steer and feet to press the gas and brakes.

Retinal disparity is a binocular depth cue which occurs due to different images coming from each eye. This depth cue made it possible for Ashley to distinguish the distance between her car and other objects (such as guard rails and cars) and avoid further collisions.

Heuristics are shortcuts the brain uses to solve problems or make decisions quickly. In this cas, Ashley could have used the availibility heuristic and made decisions based on the number of similar situations that came to mind. This could be used to choose which direction was more safe or promising based on how similar paths had worked in the past for her.

Procedural memory allows people to perform actions repeatedly or after practice/rehersal. Ashley's procedural memory allowed her to drive a car (which involves steering, braking, shifting, etc.) without excessive thought or effort to do so.

Circadian rythm is the body's biological clock that runs on about a 25 hour schedual and is influenced by day/night or lighting. Ashley's trip across the country took her through many different time zones in which the day and night cycles occured

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Question 1 is reprinted for your convenience.

1. Ashley planned to drive from New York to California to attend college. However, shortly after departing, she became uncertain about which roads to take and called her parents for assistance with directions. Because she was distracted, she drove off the side of the road and grazed the front bumper of her car on the guardrail. Fortunately, the car was not too badly damaged, so she continued on her journey. Although she ultimately made it to California, she had a lingering fear of guardrails for several months following her experience.

Part A

Explain how each of the following might have helped Ashley drive from New York to California. Definitions alone will not score.

- Motor neurons
- Retinal disparity
- Heuristic
- Procedural memory

Part B

Explain how each of the following might have led Ashley to have a negative experience on her trip from New York to California. Definitions alone will not score.

- Circadian rhythms
- Conditioned response
- Inattentional blindness

at different times from her own original one in New York. This dissonance between her internal clock and the external time of day could cause her to be drowsy during the day and less alert, leaving her perceptable to distractions and accidents.

A conditioned response is a factor of classical conditioning. This type of response is created when an unconditioned stimulus is associated or pair with an unconditioned response, thus leading the subject to associated the response with the new stimulus, and give the same reaction/response when presented with the newly conditioned ~~very~~ stimulus. Ashley demonstrates this in her new fear of gaurd rails. She associates the terror of the accident with the gaurd rail, and now becomes afraid (the

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ADDITIONAL ANSWER PAGE FOR QUESTION 1

(conditiond response) every time she sees a gaurd rail (the stimulus.)

Inattentional blindness occurs when a person gives attention to one thing while unconsciously ignoring the other. In this case Ashley was so preoccupied with her phone call that she did not notice the gaurdrail as she approached it.

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ANSWER PAGE FOR QUESTION 1

I have been tasked to assess a subject and her actions in terms of psychology, applying concepts thay may have explained her behavior.

First, motor neurons are what helped Ashley physically drive the car. They are the connection between the brain and skeletal muscles - Ashley thought about driving the car, and her motor neurons drove her muscles to do so. Ashley's retinal disparity, which controls depth perception, also helped her drive the car. Retinal disparity is essential in driving; it keeps us from colliding with other objects on the road. Ashley may also have used heuristics, or simple procedures to carry out tasks. Heuristics may have assisted Ashley in remembering directions on the way from New York to California. Procedural memory may also have helped Ashley find her way to California. Procedural memory controls how we remember steps of a process or how things function. This also may have helped Ashley remember how to drive her car.

Ashley's circadian rhythms, conditioned

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Question 1 is reprinted for your convenience.

1. Ashley planned to drive from New York to California to attend college. However, shortly after departing, she became uncertain about which roads to take and called her parents for assistance with directions. Because she was distracted, she drove off the side of the road and grazed the front bumper of her car on the guardrail. Fortunately, the car was not too badly damaged, so she continued on her journey. Although she ultimately made it to California, she had a lingering fear of guardrails for several months following her experience.

Part A

Explain how each of the following might have helped Ashley drive from New York to California. Definitions alone will not score.

- Motor neurons
- Retinal disparity
- Heuristic
- Procedural memory

Part B

Explain how each of the following might have led Ashley to have a negative experience on her trip from New York to California. Definitions alone will not score.

- Circadian rhythms travel time
- Conditioned response guardrail
- Inattentional blindness phone

response, and inattentional blindness contributed to her negative experience on her trip. Since the roadtrip from New York to California is very long, Ashley's circadian rhythm may have been disrupted. Circadian rhythm is the natural body clock of humans - it controls when we sleep and wake, and is run by the release of hormones such as melatonin. Ashley drove for a long period of time, probably without sleep, so her tiredness may have been a cause for her negative experience. When Ashley hit the

ADDITIONAL ANSWER PAGE FOR QUESTION 1

guardrail with her car, she was classically conditioned. The unconditioned stimulus was her hitting the guardrail, and her unconditioned response was fear. Her conditioned stimulus became guardrails, and her conditioned response, or the response that results from seeing or experiencing a conditioned stimulus, became fear. Her lingering fear of guardrails after her accident was a conditioned response. Ashley also experienced inattentional blindness on her trip. Inattentional blindness occurs when a person is focused on one thing, and is oblivious to what is happening around him or her. Ashley's inattentional blindness resulted from her using her phone while driving. She was focused on her phone and her conversation with her parents, and consequently was unaware of her surroundings while driving. As a result, she drove off the road and hit the guardrail.

In conclusion, Ashley's experience on her drive from NY to CA may be adequately explained using psychological concepts.

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ANSWER PAGE FOR QUESTION 1

Motor Neurons could have helped Ashley drive from New York to california by allowing her body's motor skills to function. Without these motor skills, such as talking, moving, ect., Ashley wouldn't have been able to communicate with her parents. Retinal disparity would help her see on her trip from New York to California. This would allow her eye's lens to flip and focus on the retina for Ashley to see. Heuristics might help her by having a sense of confidence. Lastly, Procedural memory would help her by memorizing what her parents told her to make the long trip to california, as well as what she already knew. Circadian Rhythms could cause her to have a negative experience because she is driving a very long way, there is no doubt she will get tired and need an eight hour sleep cycle. Conditioned response could negatively impact her because she is not conditioned to drive such a long period of time. She would need a conditioned stimulus to activate a conditioned response. Inattentional blindness could negatively impact her because she could get distracted by something causing her to not pay attention to important things, such as her surroundings. Then causing her to possibly wreck.

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Question 1

Overview

The question required students to apply seven psychological concepts to the context of Ashley driving from New York to California to attend college.

The question consisted of two parts: Part A, which required students to illustrate how the concepts of motor neurons, retinal disparity, heuristic, and procedural memory would each help Ashley on her drive; and Part B, which required students to illustrate how the concepts of circadian rhythms, conditioned response, and inattentional blindness contributed to a negative experience on the drive. For each score point, students had to apply the concept to the scenario in a manner that demonstrated mastery of the concept and an ability to distinguish it from related concepts.

Sample: 1A
Score: 7

The response earned point 1 because it accurately states that motor neurons would help Ashley perform the motor movements necessary to accelerate, stop, and steer. The response earned point 2 because it notes the role of the different images from each of Ashley's eyes helping her gauge distance while driving to avoid collisions. The response earned point 3 because it depicts Ashley making a decision about the drive quickly by considering her similar past experiences. The response earned point 4 because it explains that Ashley is able to carry out the actions involved in driving a car with little thought or effort. The response earned point 5 because it references a biological alertness cycle that falls on a 25-hour pattern, the disruption of which could lead her to crash. The response earned point 6 because it depicts Ashley acquiring a fear of guardrails following her collision with one. The response earned point 7 because it notes that Ashley is preoccupied by the phone call and does not see the guardrail (presumably this distraction causes her to hit the guardrail, but the collision is implied in the stem and not necessary for this specific application).

Sample: 1B
Score: 3

The response earned point 1 because the student notes the role of motor neurons in enabling Ashley's execution of the physical (as opposed to cognitive) act of driving the car. The response did not earn point 2 because although it associates retinal disparity with depth perception, there is no explanation of the difference between the retinas' images. The response did not earn point 3 because it does not specify a particular strategy being used as a heuristic. The response did not earn point 4 because it does not specify that procedural memory is implicit. The response earned point 5 because it notes sleep/wake as a specific biological cycle, the disruption of which leads to Ashley feeling tired. The response earned point 6 because it correctly identifies fear of guardrails as a conditioned response acquired due to the accident. The response did not earn point 7 because there is no specific reference to an object not being seen because of misdirected attention.

Sample: 1C
Score: 1

The response earned point 1 because it shows how motor neurons enable Ashley to engage her body's motion to communicate with her parents, which is a feature of her drive that required movement. The response did not earn point 2 because it does not explain either the role of the differences between what the two eyes see or depth perception. The response did not earn point 3 because it appears to confuse problem solving with confidence. The response did not earn point 4 because it does not contain references to implicit

Question 1 (continued)

memory for how to perform a task related to the drive. The response did not earn point 5 because although it refers simply to the need we all have for sleep after a long drive, it does not indicate that the time of day will influence this need. The response did not earn point 6 because it implies that driving stamina is a learned process and does not give an example of a reflexive association related to driving. The response did not earn point 7 because it does not specify an object that Ashley fails to see while her attention is directed elsewhere.