Finding Our Way reading passage

Finding Our Way

A. The car's computer voice tells the driver to drive 200 yards and make a right. You drive slowly, pay attention to the traffic signals, and reach your destination without any problems. It is convenient to have the Global Positioning System (GPS) direct you within a few yards of your goal. However, you run the danger of becoming lost if the satellite service's digital maps lapse even a little. The ability of people to navigate in three dimensions must therefore be relied upon. Your biological finder, however, has a crucial advantage over GPS: because it works in various ways, it is unaffected if only one element of the guidance system breaks down. On the sidewalk, people are approachable. Take a different route if one seems familiar. Use a navigational rule instead: "If I keep the East River to my left, I will eventually cross 34th Street." The human positioning system is flexible and capable of absorbing new data. Anyone who can find their way between points A and B and between points A and C should be able to do the same between points B and C.

B. So how does this cognitively demanding system function? Researchers are looking into three approaches for spatial awareness: guidelines, route assimilation, and route following. Humans used all 3 or some of them. According to experts, as we gain knowledge about these navigation systems' abilities, they may support our cognition and rational thinking abilities. Grand Central Terminal, Presume you've merely arrived in New York City, a town you've never visited before. You disembark at Manhattan's Grand Central Terminal. You have a few hours before you have to return to catch your ride home. You travel uptown to see well-known landmarks such as Rockefeller Center, Central Park, and the Metropolitan Museum of Art. You stop at various stores along the way. Returning to the station is now necessary. But how precisely

C. If users ask passers-by for assistance, they will most likely receive information in a variety of formats. "Look down there," someone says, pointing to a prominent landmark. Have you noticed the MetLife Building, which is both tall and wide? "The station is right beneath it," so go there. This navigational approach is referred to by neurologists as "guidance," which implies that a faraway landmark serves as an indicator of one's location.

D. Another city dweller could inquire, "What regions do you recollect traveling through?" Okay. Take a trip down to St. Patrick's Cathedral from the far end of Central Park. Grand Central will be on your left in a few blocks." In this situation, you are led to the most recent location that you can recall. Then you retrace your steps to the next significant location, and so on. Your brain is assembling the pieces of your journey into a comprehensive progress report. This tactic is known as "path integration" by researchers. Few animals, such as insects, spiders, crabs, and rodents, primarily use their paths to navigate. Cataglyphis desert ants employ this technique to return from foraging up to 100 yards distant. They use the refraction of sunlight to navigate even in overcast skies by noting the general direction they came from and retracing their steps. They adhere to this internal homing vector as they return. Even when a scientist lifts an ant and places it in a whole other position, the ant will persistently continue in the direction it was first pointed at until it has "gone back" the entire distance it traveled from its nest. The ant begins to make larger loops to get home once it recognizes that it has failed.

E. Whether an animal is seeking to get to the anthill or the train station, it must keep track of its movements to know, on the way back, which portions it has already finished. To determine the direction your body has moved, your brain gathers information about your environment as you move, including sounds, images, smells, lights, muscle contractions, and a sense of time passing. Images of key points in your travel include the train station, the open courtyard, the sizzling sausages on that street vendor's grill, and the cathedral spire.

F. We employ a third navigational strategy in addition to guidance and path integration. A Manhattan office worker on a corner would respond, When asked for instructions, I replied, "Walk straight down Fifth, turn left on 47th, turn right on Park, go via the walkway of the Helmsley Building, then cross the street to the MetLife Building into Grand Central. Route following is a method of navigation that makes use of landmarks like buildings and street names as well as directions like "straight," "turn," and "go through."

G. Even if route following is more precise than guidance or path integration, if you forget the specifics and wind up somewhere unexpected, there is no way to get back on track because you don't know the general direction or have a landmark to utilize as a point of reference for your goal. The route-following navigation technique is intellectually challenging. We must remember all the landmarks and alternate routes. Despite being the most thorough and therefore most reliable method, it is prone to typical memory mistakes. Path integration puts less strain on our cognitive memory because it just needs to retain the homing vector and a small number of general instructions. Path integration works because we constantly have access to these inputs, which are essentially dependent on our awareness of the general direction of our body's motion. Nevertheless, route-following instructions are routinely given, in part because directing someone to go in a specific direction is not always effective in a complicated, man-made environment.

H. Maybe it's a metaphor. When you return to Manhattan, you'll utilize your memories to get around. You'll likely combine route following, path integration, and guidance. But how exactly do these structures offer detailed instructions? Do people have a mental map of the real world that includes thick lines for major roads and thin lines for side streets, along with icons for cities, train stations, and churches? A "cognitive map" is the term used by cognitive psychologists and neurobiologists to describe the area of human memory that manages navigation. The map metaphor makes sense given that maps are the easiest way to present geographic information for simple visual interpretation. Before writing became widely employed in many countries, maps were used in practically every society today. It's even conceivable that the universal organization of our spatial memory systems served as the foundation for the creation of maps.

I. However, a rising body of research contends that the cognitive map is essentially a metaphor, casting doubt on the notion that we have a true mental map. It might be more like a set of hierarchical relationships. To get back to Grand Central, you must first think broadly, or imagine the general structure of the station. Then you picture the route via that system to the last place you can remember being. Then you scan your immediate surroundings for a recognizable storefront or street sign that will direct you there. In this hierarchical, or nested, structure, positions, and distances are relative, as opposed to a road map where the same information is displayed on a geometrically precise scale.

Finding Our Way reading questions

Questions 1 - 5

Use the information in the passage to match the category of each navigation method (listed A-C) with the correct statement. Write the appropriate letters A-C in boxes 1-5 on your answer sheet.

NB you may use any letter more than once

A. Guidance
B. Path integration,
C. Route following

1. Simple instructions and bright lighting are used to advance.
2. Integrating location and direction while moving in the direction of the destination
3. Consider using a well-known building nearby as a guide.
4. Whenever a mistake is made, retrace your steps starting from a well-known place.
5. When developing a new integration, referring to a passing region.

Questions 6-8

Choose the correct letter A, B, C, or D

6. What does the Cataglyphis ant say if it is moved to a different site by the passage?

A.significantly improves the orientation sensors
B. releases a biological fragrance to request assistance.
C. follows the initial orientation to continue moving
D. gets completely lost when startled

7. Which of the following statements regarding the "cognitive map" in this chapter is accurate?

A. There is no discernible distinction. compare with a real map

B. In our minds, it already exists and is constantly true.

C. It is only present in particular cultures.

D. It was controlled by my memory.

8. Which of the following statements about how the results are presented best describes how the cognitive map works?

A. It depicts a virtual path in great detail.
B. It replicates every landmark's precise details.
C. More emphasis is placed on observation.
D. shop or supermarket is necessary on the file map.

Question 9-13

Do the following statements agree with the views of the writer in Reading Passage 1?
In boxes 9-13 on your answer sheet, write

YES *if the statement agrees with the views of the writer*
NO *if the statement contradicts the views of the writer*
NOT GIVEN *if it is impossible to say what the writer thinks about this*

9. Biological navigation has a state of flexibility.
10. You will always receive a good reaction when you ask for directions.
11. When someone follows a route, he or she collects comprehensive perceptional information in mind on the way.
12. Path integration requires more thought from the brain compared with route-following.
13. In familiar surroundings, an exact map of where you are will automatically emerge in your head.