The creation of lasting memories reading passage

The creation of lasting memories

A.Multiple studies of the cognitive processes underlying memory consolidation (permanent memories) have required the treatment and retraining of animal and human subjects to complete an early task. These have vastly contributed to our knowledge.

B.Bernard Agranoff showed that administering creatine supplementation inhibitors had a ground-breaking work with goldfish that caused goldfish to unlearn everything they had previously learned. Moreover, before teaching the fish he administered blockers of the synthesis of proteins immediately. Surprisingly, the creation of protein inhibitors hindered declarative memory yet had no effect on short-term memory, the fish learned the task normally but quickly forgot it.

C.Electroconvulsive therapy (ECT), which inhibits declarative memory preserves short-term memory, according to mounting evidence. Ivan Izquierdo discovered that certain pharmacological treatments can impair short-term memory without affecting memory development. On the flip side, a theory was put forth that long-term memory and short-term memory are not dependent on one another. This was suggested by Canadian psychologist Donald Hebb in 1949.

D.These results demonstrate that our experiences generate simultaneous and potentially separate periods of memory, each with its own lifespan. The reason for this is unknown for all of these clinical and experimental trial results strongly show that the brain makes recent and remote memories differently

E.To adapt to an environment that is always changing, we need a memory that can be generated quickly. The majority of contemporary building codes, for example, stipulate that stair step heights must be the same. After ascending or descending a few steps, we immediately remember their heights and think that the rest will be the same. If they do not correspond, we may trip and fall. This situation is helpful for lawyers but surely not for all of us and insurance companies. It would be of little use if we could only recall the step heights after several hours have passed and the memory has solidified.

F.The majority of this theory's support comes from clinical and experimental data that medications and illnesses affecting brain function can have an effect on long-term memory development. Many other sorts of evidence show that after learning, memories gradually solidify over time. Human participants educated in visual skill showed no improvement until eight hours after the training was complete, and then showed even greater improvement the following day, as reported by Avi Kami and Dov Sagi. Also, the mastery was maintained over a long period of time.

G.In addition, studies employing human brain scans to carefully assess neuronal activity induced by learning have revealed that these changes linger for hours after learning. Reza

Shadmehr and Henry Holcomb performed innovative research using functions available of the brain to assess brain activity in various regions of the brain shortly after training human volunteers in a motor learning task including arm and hand movements. Although the subjects' performance remained consistent for several hours following training, their brain function did not; various regions of the brain were extremely active at various times over the several hours of training. The activity changed from the prefrontal cortex to the recognized movement-regulating motor cortex and cerebellar cortex. Integration of the motor ability appeared to include activation of many neural networks, which maintained underlying brain processes.

H.In addition, there is evidence that learning-induced associations in the firing of neurons in the cerebral cortex persist for days following training. In a series of extensive experiments with rats implanted with diodes in the auditory cortex, Norman Weinberger found that after a narrow band tone was recurrently paired with footshock, nerve cells in the auditory cortex reacted more firmly to the particular tone and less strongly to other tones with various frequencies. Inquisitiveness, the uniqueness of the neurons' responses to the particular tone used in learning remained higher for a number of days after training had concluded.

I.Why our long-term memories grow slowly is not easily explicable. It is definitely puzzling why we have a type of memory on which we must rely for many hours, days, or even a lifetime, yet which is so sensitive to disturbance quickly after its formation. The brain circuitry that centralizes long-term memory over time may have been an evolutionary afterthought. In addition, the size and complexity of our mammalian brains may result in slower memory integration. These beliefs are simple to debunk. Every known animal species possesses both short- and long-term memory and is subject to forgetfulness. Birds, bees, mollusks, fish, and rodents have long-term memory, similar to humans. Memory consolidation has existed and been conserved since the beginning of evolution.

J.Even though there appears to be no compelling reason to believe that a biological system such as the brain could not rapidly develop a long-lasting memory, this is not the case. Memory consolidation must therefore fulfill a crucial adaptive purpose or function. There is strong evidence that slow consolidation is adaptive, as it allows neurobiological mechanisms to adjust the memory intensity for experiences immediately after learning. Intriguingly, a substantial body of evidence indicates that therapies taken quickly after training may both improve and damage memory.

The creation of lasting memories reading questions

Questions 1 - 4

Do the following statements agree with the views of the writer in the Reading Passage?
For questions (1 - 5) in your answer sheet, write
***YES** if the statement agrees with the views of the writer*
***NO** if the information provided is contradictory to the views of the writer*
***NOT GIVEN** if there is no information to corroborate with the views of the writer*

1. The subjects of kami and sagi were subjected to numerous days of training.
2. Rats in Weinberger's research learned to associate a particular noise with a particular event.
3. Weinberger’s researchers suggested that the strength of rats' learned associations increases over time.
4. It is easy to recognize the evolutionary advantage of the manner in which humans create long-lasting memories.
5. Many other species have weaker long-term memories than humans.

Questions 6-10

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

6.Reading passage describes Bernard Agranoff' 's entailed

A. injecting goldfish at several experimental stages.
B. Training goldfish to perform a variety of activities
C. Utilizing an alternative method to cure Goldfish
D. Comparing the performance of various goldfish to complete specific activities.

7.Recent study indicates that

A. pharmacological therapies often do not impact short-term memory.
B. Selective memories serve as the basis for long-term memory.
C. Different systems produce both short-term and long-term memories
D. The ECT treatment has an effect on both forms of memory.

8.What is the author aiming to convey in the fifth paragraph using staircases as an illustration?

A. The completion of daily tasks is contingent upon the fast formation of memories.
B. It is possible to execute mundane tasks unconsciously.
C. Accidents involving the body might impair memory function.
D. Complex information, such as regulations, cannot be stored in memory.

9.The research on memory that Kami and Sagi

A. have been conducting raises questions about the commonly held beliefs.
B. Having nothing more than an effect on the working memory
C. Activities that required one to make use of their hearing formed the basis of these
D. confirmed by additional testing the findings of the previous ones

10.What did the experiment by Shadmehr and Holcomb show?

A. Activating different parts and subparts of the brain required the completion of a range of different activities.

B. As the process progressed, the activity in the brain gradually moved from one region to other regions as it moved through the brain.
C. The participants' overall performance in a given task continued to show signs of improvement even after the training program had been completed.
D. The medication that was given to the patients resulted in an improvement in the subject's performance on the task that was being tested.

Question 11-14

Complete the Summary using the list of words A-I given below

Researchers from a broad range of disciplines have looked at the processes that underlie the formation of long-term memories. Experiments that are carried out in a laboratory often involve telling people to do something (**11**)_____, and then either delivering medication to them or giving them minor electric shocks after they have completed the task. Other studies either look at a person's behavior after they have been through a learning experience or utilize the advanced technology to observe brain activity in people while they are learning.
The findings, which are mostly consistent with one another, indicate that long-term memories are the consequence of a complex biological process that costs (**12**)_____.
The fact that humans and other species, even animals with (**13**)_____brains, share this attribute is proof that it originated (**14**)_____during the course of the evolutionary journey of our species.

A.Early	B Easy	C Large	D Late	E Lengthy
F New	G Recently	H Small	I Quick	-