

NCERT SOLUTIONS

CLASS - 11th



aglasem.com

Class : 11th

Subject : Psychology

Chapter : 7

Chapter Name : Human memory

Q1 What is the meaning of the terms 'encoding', 'storage' and 'retrieval'?

Answer. Memory as a process can be considered to be consisting of mainly three interrelated stages.

The first stage can be referred to as 'encoding' which can be conceptualised as a process in which, for the first time, information is recorded and registered to be used by one's memory system.

The second stage is known as 'storage'. At this stage, the information which was encoded at the first stage is stored so that it can be used at a later stage. The information is retained and held for a period of time. The third stage is known as 'retrieval'. It is based on the fact that information can only be used when one is able to retrieve/recover it from their memory. Retrieval can be described as a process to bring the stored information to one's awareness in order to perform a number of cognitive tasks.

Page : 148 , Block Name : Long answer

Q2 How is information processed through sensory, short-term and long-term memory systems?

Answer. With the invention of computers, human memory came to be seen and compared with a computer system, that processes information. It was seen how both store and manipulate information. This led to the development of stage model. It was the very first mode of memory and was proposed by Atkinson and Shiffrin in 1968.

It consists of three memory systems. Sensory memory, it is of the maximum capacity. However it is of the shortest duration, this means that the information that is registered, decays automatically in less than a second. The registration of the information from all the senses takes place here. This happens with accuracy, i.e., the exact replica of the stimuli is registered here. However, one doesn't attend to all the information that is registered. But the information that is attended to, enters the second system, short term memory. It was said that this system holds the information for about 30 seconds or less and unless repeated continuously, it may get lost from this system.

The registered information, after going through the limited system of the first two systems, may enter into the last system, known as the long term memory. Information which enters here once, is more than likely to be remembered forever.

Page : 148 , Block Name : Long answer

Q3 How are maintenance rehearsals different from elaborative rehearsals?

Answer. Not all of the information that is collected by the sensory system, enters short term memory. As the information enters the short term memory, it sets into motion a control process where information can be retained in the memory for as much time as is needed, using maintenance rehearsals. The information is, however, only retained in memory if it is silently or acoustically repeated, otherwise its lost. Another process which is used to expand the memory capacity of this, is known as chunking.

To enter the long term memory, the information goes through elaborative rehearsal. This is done by connecting the information which is to be retained to the information which is already present.

Page : 148 , Block Name : Long answer

Q4 Differentiate between declarative and procedural memories.

Answer. It is said that the long term memory is considered not to be unitary but actually is classified as declarative and procedural (also known as nondeclarative) memories.

The declarative memory is formed of all such information that pertains to facts, names and/or dates. For example: the information that India got independence on August 15, would be a part of this memory.

On the other hand, procedural memory has information pertaining to the process of how to perform each and every task. For example: how to drive a car. The information which is a part of this memory, cannot be described easily whereas the kind that is present in the declarative part, is more easy to describe and narrate, verbally.

Page : 148 , Block Name : Long answer

Q5 Discuss the hierarchical organisation in long-term memory?

Answer. As per the suggestions of Allan Collins and Ross Quillian, it is believed that knowledge in long-term memory is

readily organised as concepts, categories and images. Also, these are organised hierarchically and assume a structure. The elements which are present in the structure are called nodes.

Nodes are concepts. Although these connections between nodes are labelled relationships, and indicate category membership or concept attributes, this view suggests that at a certain level, one can store all knowledge which applies to all the members of a category. This ensures a high degree of cognitive economy as the need to repeat that information at the lower levels in the hierarchy goes away, which also means that there is a maximum and efficient use of the capacity of long-term memory with minimal effort.

Images: An image can be described as a concrete representation which would directly convey the attributes of an object, perpetually. It is believed that all concrete objects generate images and the knowledge of the same is encoded both verbally and visually, as well. This was originally proposed by Paivio and is known as dual coding hypothesis.

Page : 148 , Block Name : Long answer

Q6 Why does forgetting take place?

Answer. It is believed that the reason behind our forgetting a certain kind of information can be many. There are some specific reasons because of which we forget, which can be because of the fact that the information we commit to our long term memory is lost, somehow. It can be because it wasn't memorised well enough, or because it wasn't encoded correctly or it is because during the process of storage, it got misplaced. Some theories which have been suggested to explain this are:

1. Theory of forgetting by Hermann Ebbinghaus: According to this, the rate at which a person can forget something is maximum in the first nine hours, specifically during the first hour. After which, the rate slows down and then not much is forgotten, even if it's after many days.
2. Forgetting due to Trace decay:
This is also called disuse theory and it is the earliest theory of forgetting. The basic assumption of this theory is that of memory traces, it means that memory leads to modification within the central nervous system, which is of a very similar character to the physical changes in the brain called memory traces.
3. The interference theory believes that
forgetting can be a consequence of interferences between various informations that the memory store contains and may receive.
Interference may come about at the time of retrieval, this is when there are various sets of associations to compete with each other for the process of retrieval.
4. Forgetting due to retrieval failure: this theory suggests that at the time of retrieval, retrieval cues may be absent or be inappropriate, in which case forgetting occurs.
Retrieval cues help us in recovering the stored information.

Page : 148 , Block Name : Long answer

Q7 How is retrieval related forgetting different from forgetting due to interference?

Answer. It was suggested by Tulving that certain specific contents of memory may become pretty inaccessible over time. This can be due to the absence of or the very presence of inappropriate retrieval cues that may be available, this happens at the time of recalling the information.

According to the theory of forgetting due to interference, this so happens when one forgets because there may be too much interference between various informations that the memory store contains or receives. According to this theory learning and memorizing are the processes which involve the forming of associations between items and these remain in the memory.

Page : 148 , Block Name : Long answer

Q8 What evidence do we have to say that 'memory is a constructive process'?

Answer. Bartlett believed that memory is not a reproductive, but a constructive process. His method of serial reproduction, in which people who were participating in this studies had to recall the memory materials at varying time intervals, has been widely used. The participants were seen to be committing a number of mistakes and errors while engaging in this method of learning. However, these mistakes were considered to be useful by Bartlett. These helped him to understand the process of construction of memory. His studies used meaningful materials such as texts, folk tales, fables etc. He also conducted experiments to understand the way in which the contents of any specific memory gets affected by various psychological factors such as a particular person's knowledge, goals, motivation, preferences. In the process of memorization, schemas play a very significant role. Schemas are influential in the way that they are an organisation of past experiences and knowledge which influence the way in which incoming information is interpreted, stored and later retrieved.

Page : 148 , Block Name : Long answer

Q9 Define Mnemonics? Suggest a plan to improve your own memory.

Answer. The strategies for improving one's memory are known as mnemonics. Many times, some of these mnemonics involve the use of images. At other times, emphasis on self-induced organization of learned information can be put to work. The two prominent mnemonic devices to enhance memory, which make use of images are as follows:

1. The Keyword Method: In this method, a keyword is chosen, which can be an English/Hindi word that sounds similar to the word of a foreign language (target word). This can be explained as: If you want to remember the French word for birth which is *naitre*, and sounds like the hindi word "netr" meaning eye, you may choose eye/netr as the keyword and then recall the images of the initially chosen keyword and the target word, and imagine them as interacting.
2. The Method of Loci: This method is seen to be particularly helpful for remembering items in a specific serial order. It requires that the person first visualize objects/places that they might know very well in a sequence. This can be done by imagining the objects one would want to remember, and associating them one by one to the physical locations. For example, if one wants to remember bread, eggs, tomatoes and soap on the way to the market, visualisation of a loaf of bread and eggs placed in their kitchen,

tomatoes kept on a table and soap in the bathroom might come to help. While entering the market all that would be left to do is to take a mental walk along the route from the kitchen to the bathroom recalling all the items of your shopping list in a sequence.

3. Mnemonics using organization: This refers to forcing a certain kind of order on the material one wants to remember. This can be pretty helpful as the framework that gets created while organising, makes the retrieval task very reasonable and easy. In the process of chunking, several of the smaller units get combined to form larger chunks. Some organisational principles are important for creating chunks, to link smaller units.

Page : 148 , Block Name : Long answer

aglasem.com