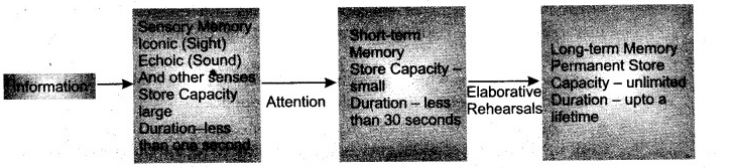
Question 1. What is the meaning of the terms 'encoding', 'storage' and 'retrieval'?
Answer: Memory is conceptualized as a process consisting of three independent, though interrelated stages. These are:

1. Encoding:
    - It is the first stage which refers to a process by which information is recorded and registered for the first time so that it becomes usable by our memory system.
    - In encoding, incoming information is received and some meaning is derived.
2. Storage: It is the second stage of memory:
    - Information which was encoded must also be stored so that it can be put to use later.
    - Storage refers to the process through which information is retained and held over a period of time.
3. Retrieval: It is the third stage of memory.
    - Information can be used only when one is able to recover it from his/her memory.
    - Retrieval refers to bringing the stored information to his/her awareness so that it can be used for performing various cognitive tasks.

Question 2. How is information processed thrdugh sensory, short-term and long-term memory systems?
Answer: Atkinson and Shiffrin model of memory also known as stage model of memory.

- This proposes the existence of three separate but sequentially linked memory systems, the sensory memory, the short-term memory and the long-term memory.
- The sensory memory—contains a fleeting impression of a sensory stimulus (a sight or a sound). It is initial process that preserve brief impression of stimuli. It has a large capacity. It is of very short duration that is less than a second.
- The short-term memory—a limited recollection of recently perceived stimuli (a telephone number or an order of drinks). It holds small amount of information for a brief periocfof time i.e. less than 30 seconds. It is primarily encoded acoustically.
- The long-term memory—a more or less permanent store of memories for later retrieval (e.g. our telephone numbers). In this stage informations are encoded semantically and storage capacity is unlimited.
- Each of these memory system is seen as differing in the way they process information, how much information they can hold and for how long they can hold that information.
  The model can be expressed in the following diagram:



Question 3. How are maintenance rehearsals different from elaborative rehearsals?

Answer: Maintenance rehearsals:

- It is an important control process of STM.
- It is used to retain the information for as much time as required.
- As the name suggests these kinds of rehearsals simply maintain information through repetition and when such repetitions discontinue the information is lost.
- It is carried through silent or vocal repetition.

Elaborative rehearsals:

- From the STM information enters the long term memory through elaborative rehearsals.
- This rehearsal attempts to connect the "to be retained information" to the already existing information in long term memory.
  e.g. the task of remembering the meaning of the work "humanity" will be easier if the meaning of concepts such as "compassion", "truth" and "benevolence" are already in place.
- In elaborate rehearsals, one attempts to analyse the information in terms of various information it arouses.
- Assignment of meaning and associations are formed. -
- It involves organization of the incoming information in as many ways as possible e.g. we can expand the information in some kind of logical framework, link it to similar memories or else create a mental image.

Question 4. Differentiate between declarative and procedural memories.
Answer: Difference between declarative and procedural memories are following:
Declarative Memory

- All information pertaining to facts, names, date, such as rikshaw has three wheels or that India became independent on August 15,1947 or a frog is an amphibian or you and your friend share the same name are part of this.
- Facts retained in this memory are related to amenable to verbal descriptions.

Procedural Memory

- It refers to memories relating to procedures of accomplishing various tasks, i.e. skill learning e.g. how to make tea, play basketball or drive a car. .
- Contents of this memory can not be described easily.

Question 5. Discuss the hierarchical organisation in long-term memory?
Answer:

- Allan Collins and Ross Quillian suggested that knowledge in long-term memory is organized in terms of concepts, categories and images and are organised hierarchically and assumes a network structure. Elements of this structure are called nodes.
- Nodes are concepts While connections between nodes are labelled relationships, which indicate category membership or concept attributes.
- According to this view, we can store all knowledge at a certain level that 'applies to all the members of a category without having to repeat that information at the lower levels in the hierarchy'.
- This ensures a high degree of cognitive economy, which means maximum and efficient use of the capacity of long-term memory with minimum effort.

- Images: An image is a concrete form of representation which directly conveys the perceptual attributes of an object.
- All concrete objects generate images and the knowledge related to them is encoded both verbally as well as visually. This is known as dual coding hypothesis, originally proposed by Paivio. Such information can be recalled with greater ease.
- According to this hypothesis, concrete nouns and information related to concrete objects are images.
- Information related to abstract concepts assume a verbal and a descriptive code. For example, if you are asked to describe a bird, the first thing that happens is that an image of a bird is generated and based on this image, you describe a bird. But, on the other hand, the meanings of concepts like 'truth' or 'honesty' will not have such accompanying images.

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