PSYCHOLOGY ENTRANCE EXAMINATIONS

Useful for CUET-PG Psychology, GATE & Other M.A/ M.Sc Psychology Entrances

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Chapter 06 Human Memory

Explanations

1. d) both b. and c.
Explanation: Option d is correct because information passes into the short-term store from both the sensory store (option b) and the long-term store (option c). From the sensory store: Information from the environment enters the sensory memory (sensory store) first, where it is briefly held for further processing. Some of this information then moves to short-term memory for more immediate processing and attention.
From the long-term store: Information stored in long-term memory can also be brought into short-term memory when it is needed for current tasks or processing. Retrieval from long-term memory to short-term memory occurs when we recall or remember something.
So, both options b and c are correct because information can enter short-term memory from both the sensory store and the long-term store.

2. a) the alteration of remembered information to help make sense of it.
Explanation: Memory is not a passive recording of events but rather a reconstructive process influenced by various factors such as personal biases, experiences, and expectations. When recalling past events, individuals may unintentionally alter or reconstruct memories to fit with their current understanding or beliefs about the world. This process can involve filling in gaps in memory, adding details that were not originally present, or distorting the recollection of events. The reconstructive nature of memory can lead to inaccuracies or errors in recall, highlighting the dynamic and sometimes fallible nature of human memory.

3. d) encoding, storage, retrieval.
Explanation: Memory involves three main processes: encoding, storage, and retrieval.
Encoding: This is the initial process of converting sensory information into a form that the brain can understand and use. Encoding involves transforming sensory input into a meaningful representation that can be stored in memory.
Storage: Once information is encoded; it is stored in the memory system.

Storage involves retaining encoded information over time. Memory storage can be temporary or long-term, depending on various factors such as rehearsal, organization, and significance.
Retrieval: This is the process of accessing and bringing stored information back into conscious awareness when needed. Retrieval involves locating and recovering information from memory storage and bringing it into working memory for use.

4. c) seven.
Explanation: The capacity of short-term memory is often described as being able to hold about seven (plus or minus two) simple, repeatable items. This concept, proposed by psychologist George A. Miller in the 1950s, suggests that individuals can typically retain between five to nine items in short-term memory. However, this capacity can vary depending on factors such as the complexity of the information, individual differences, and strategies used for encoding and rehearsal.

5. d) recognition is to recall.
Explanation: In this analogy, the relationship between "multiple choice" and "essay" mirrors the relationship between "recognition" and "recall." Multiple choice questions typically require the recognition of the correct answer from a set of options, similar to how recognition tasks involve identifying previously encountered information. Conversely, essay questions demand the recall of information from memory without the aid of choices, paralleling the process of recall, which involves retrieving information without specific cues or prompts.

6. a) iconic memory.
Explanation: Visual sensory memory, which refers to the brief storage of visual information in the sensory register, is commonly known as iconic memory. Iconic memory retains visual information for a very short duration, typically less than a second, allowing individuals to perceive continuous visual stimuli as a seamless experience. This term was coined by psychologist George Sperling in the 1960s to describe the fleeting nature of visual impressions.

7. a) the keyword method.
Explanation: The keyword method involves creating mental images or associations between new information and familiar concepts to aid in memory retention. In this scenario, the student associates the Spanish word "carta" with a mental image of a cart full of letters, linking it to the English word "letter." This visual mnemonic device helps encode

the foreign language word by leveraging existing cognitive associations, making it easier to recall during language study or communication. This technique is particularly useful for learning vocabulary or foreign language terms.

8. b) implicit memory.
Explanation: Implicit memory refers to unconscious or automatic memory processes that influence behavior without conscious awareness. Unlike explicit memory, which involves conscious recall of information, implicit memory operates outside of conscious awareness and can influence behavior, skills, or habits without deliberate effort. Examples of implicit memory include procedural memory for skills like riding a bike or typing on a keyboard, as well as priming effects where exposure to a stimulus influences subsequent behavior or perception without conscious recognition. Implicit memory is distinct from explicit memory, which involves conscious recall of facts and events.

9. d) retrieval.
Explanation: Retrieval is not a measure of retention but rather the process of accessing or recalling stored information from memory. It is a cognitive process involved in bringing previously encoded and stored information into conscious awareness. Recall, recognition, and relearning, on the other hand, are measures of retention:
a) Recall: Involves reproducing information from memory without any cues or prompts. For example, recalling a list of items from memory.
b) Recognition: Involves identifying or recognizing previously encountered information from among other alternatives. For example, recognizing a familiar face in a crowd.
c) Relearning: Involves learning information again that has been previously learned and forgotten. The amount of time or effort required to relearn the material is used as a measure of retention.

10. c) spreading activation.
Explanation: The Collins and Loftus network model of memory organization proposes that information in memory is organized in a network of interconnected nodes, where each node represents a concept or idea, and the connections between nodes represent associations or relationships between those concepts. When one node is activated, such as hearing or thinking about “table,” the activation spreads along the connections to related nodes, facilitating the retrieval or recognition of associated concepts like “chair.” This process is known as spreading activation, where activation spreads from one node to another within the network, allowing for the retrieval of related information.

11. c) information-processing model of memory.
Explanation: The information-processing model of memory compares human memory to the operations of a computer, viewing memory as a system that encodes, stores, and retrieves information. This model emphasizes the sequential processing of information through a series of stages, including input (encoding), processing (storage), and output (retrieval). By likening the mind to a computer, this model conceptualizes memory as involving the receipt of input (such as sensory information), the processing of that information (including organization and storage), and the retrieval of stored information when needed (output).

12. d) mnemonic devices.
Explanation: Mnemonic devices are memory aids or techniques that help individuals remember information more effectively. These techniques often involve creating associations, visualizations, or patterns that make information easier to encode, store, and retrieve. Acronyms, which involve forming a word from the initial letters of a list of items, and the peg-word system, which associates items to be remembered with a list of peg words, are examples of mnemonic devices. Mnemonic devices can enhance memory performance by providing organizational structures or cues that facilitate the encoding and retrieval of information.

13. a) script.
Explanation: A script is a type of schema that organizes events in time, providing a framework for understanding and recalling sequences of actions or events. Scripts are mental representations of typical sequences of events that individuals encounter in daily life. For example, a restaurant script might include the sequence of actions involved in dining out, such as entering the restaurant, being seated, ordering food, eating, paying the bill, and leaving. Scripts help individuals make sense of and predict the actions and outcomes of familiar situations by providing a mental framework for organizing and interpreting events.

14. d) sensory register.
Explanation: According to the “three-box” model of memory proposed by Atkinson and Shiffrin, the first step in memory is the sensory register. The sensory register is the initial stage of memory where information from the environment is briefly registered and stored. It includes sensory memory for each of the five senses, such as iconic memory (visual) and echoic memory (auditory). Information in the sensory register is typically retained for a very brief duration, ranging from milliseconds to a few seconds, before either being forgotten or

transferred to the next stage of memory processing, which is the short-term memory.

15. d) chunking.
Explanation: Chunking refers to the process of grouping individual pieces of information into larger units or chunks. By organizing information into meaningful chunks, the capacity of working memory can be maximized, allowing individuals to remember more information effectively. For example, when trying to remember a long sequence of numbers like "749212613", chunking could involve grouping the numbers into smaller chunks like "749", "212", and "613", which are easier to remember as individual units. Chunking relies on the organization of information into meaningful patterns or categories, which can enhance recall and make the information more manageable for the brain to process.

16. c) Information in the visual sensory store is still in sensory form.
Explanation: Sensory memory is the brief storage of sensory information in its original sensory form. It holds a large amount of information for a very brief duration, typically for a few seconds. Sensory memory includes iconic memory for visual information and echoic memory for auditory information. In the visual sensory store, the information is retained in the form of visual images, and in the auditory sensory store, it is retained as sound or echoes. Rehearsal does not significantly impact sensory memory; its purpose is to transfer information to short-term or working memory for further processing and retention.

17. d) perception
Explanation: Perception involves the initial processing of sensory information from the environment, such as interpreting visual, auditory, and other sensory stimuli. While perception is a crucial cognitive process, it is distinct from the basic memory processes of encoding, storage, and retrieval. Encoding refers to the process of converting sensory input into a form that can be stored and used by the brain. Storage involves retaining encoded information over time. Retrieval is the process of accessing and bringing forth stored information when it is needed. These processes collectively enable the formation, retention, and recall of memories.

18. c) procedural memory.
Explanation: The basal ganglia, a group of structures located deep within the brain, are primarily involved in the formation and execution of procedural memories. Procedural memory refers to the memory of how to perform certain tasks or activities, often involving motor skills or sequences of actions. Examples of procedural memory include riding a bicycle, tying shoelaces, or playing a musical instrument. The basal ganglia help regulate

and automate these learned behaviors, playing a crucial role in the procedural memory system. While the basal ganglia are not directly involved in iconic memory (visual sensory memory) or echoic memory (auditory sensory memory), they contribute to the consolidation and retrieval of procedural memories over time.

19. b) prevent a recency effect.
Explanation: The recency effect refers to the tendency for items at the end of a list to be better remembered compared to those in the middle of the list. This effect occurs because items at the end are still in short-term memory when recall is tested. However, engaging in mental arithmetic after studying the word list would disrupt the retention of the most recent items, effectively preventing the recency effect. This is because mental arithmetic would likely involve cognitive resources and attention, causing interference with the maintenance of recent items in short-term memory. On the other hand, the primacy effect, which refers to better recall of items at the beginning of a list due to the time available for rehearsal and encoding into long-term memory, may still occur since the first items would have been better encoded before the mental arithmetic task.

20. a) group information into chunks.
Explanation: Chunking is a mnemonic strategy where information is organized into meaningful units, or "chunks," to increase the capacity of short-term memory (STM). By grouping individual items into larger, more manageable units, STM can hold more information. This is because chunking reduces the cognitive load by organizing information into familiar patterns or categories, making it easier to remember. While forming echoes and icons (sensory memory) and reducing interference (which can be achieved through various cognitive strategies) can also aid memory, grouping information into chunks specifically targets the capacity limitation of STM, making it an effective method for increasing the amount of information held in STM.

21. d) implicit memory.
Explanation: Implicit memory refers to the unconscious memory of skills and procedures. It is the type of memory that allows individuals to perform tasks or behaviors without consciously recollecting the specific events or experiences that led to their ability to do so. Implicit memory is typically acquired through repetition and practice and is often demonstrated through improved performance on tasks over time, even without conscious awareness of the learning process. Examples of implicit memory include riding a bicycle, typing on a keyboard, and playing a musical instrument.

22. c) analogue theory.
Explanation: The analogue theory suggests that long-term memory represents visual information in a manner akin to a picture or image. In other words, it posits that visual memories are stored in a format that preserves their spatial and visual characteristics, similar to how a photograph or painting represents visual scenes. This theory contrasts with the propositional theory, which proposes that memories are stored in an abstract, propositional format rather than as mental images. The feature theory emphasizes the role of distinctive features in memory representation, while the encoding-specificity theory posits that retrieval cues are most effective when they match the specific context or conditions present during encoding.

23. c) up to 30 seconds.
Explanation: When you call and ask for the phone number of your favorite restaurant, you typically have up to 30 seconds to dial the number before you might forget it. This timeframe falls within the range of short-term memory, which generally retains information for around 20 to 30 seconds without rehearsal or further processing. If you don't actively engage with or rehearse the phone number, it may fade from your short-term memory within this timeframe.

24. d) deja vu.
Explanation: Deja vu is the eerie feeling or sensation of having been somewhere before or experiencing something that feels familiar, even though the current situation or experience is new. It's often described as a sense of "having been there before" or a feeling of recognition without a clear memory of when or where the previous experience occurred. Deja vu is a phenomenon associated with memory and perception, and it can occur due to various factors, such as similarities between the current experience and past memories, temporal lobe disturbances, or glitches in memory retrieval processes.

25. c) interference theory.
Explanation: Interference theory suggests that forgetting occurs because memories interfere with each other. There are two types of interference: proactive interference, which occurs when old information interferes with new information, and retroactive interference, which occurs when new information interferes with old information. This theory proposes that memories are not lost but rather become inaccessible due to the interference of other memories.

26. d) all of the above.

Explanation: All of the mentioned strategies can help extend the time that you remember information.
Maintenance rehearsal involves repeating the information over and over to keep it in short-term memory.
Deep processing involves engaging with the information on a meaningful level, making connections, and relating it to existing knowledge.
Elaborative rehearsal involves actively processing the information, connecting it to personal experiences or other knowledge, which enhances encoding and retention.

27. c) a rapid initial decline in retention becoming stable thereafter.

Explanation: The typical forgetting curve, as described by Hermann Ebbinghaus, shows that memory retention declines quickly after learning, but this rate of forgetting slows down over time. Initially, there is a steep drop in the ability to recall information, with a significant amount of learned material being forgotten relatively soon after it is acquired. However, after this initial plunge, the rate of forgetting decreases, and the amount of information retained levels off to a more stable state. This pattern indicates that the most significant loss of memory occurs shortly after learning, which is why the first few days or weeks are critical for reinforcement to prevent information from fading away.

28. b) proactive interference.
Explanation: Proactive interference occurs when previously learned information interferes with the ability to remember new information. In this scenario, the old phone number is interfering with the ability to remember the new phone number. Retroactive interference, on the other hand, occurs when newly learned information interferes with the recall of previously learned information. State-dependent memory refers to the phenomenon where memory retrieval is enhanced when an individual's internal state at encoding matches their internal state at retrieval. Echoic memory is a type of sensory memory that briefly retains auditory information.

29. b) Intermediate memory.
Explanation: The three primary memory systems recognized in psychology are sensory memory, short-term memory, and long-term memory. Sensory memory holds sensory information for a very brief duration, short-term memory temporarily stores information actively being processed, and long-term memory stores information over longer periods, potentially for a lifetime. "Intermediate memory" is not a standard term used in the context of memory systems. Therefore, it does not represent one of the primary memory systems.

30. c) Less than 1 second.
Explanation: Sensory memory is a very brief memory system that holds sensory information from the environment for a fraction of a second to several seconds. It acts as a buffer, allowing the brain to process incoming sensory information before it either decays or gets transferred to short-term memory for further processing. Typically, sensory memory lasts for less than 1 second, with iconic memory (visual sensory memory) lasting slightly longer than echoic memory (auditory sensory memory).

31. a) Both (A) and (R) are true and (R) is the correct explanation of (A).
Explanation: Assertion (A) is true. Information in short-term memory is indeed encoded primarily through auditory representation.

Reason (R) is also true. Most verbal information stored in short-term memory is coded acoustically, even when presented visually. This phenomenon is known as the "phonological loop" in the working memory model, where auditory information tends to dominate in encoding verbal material. Therefore, both statements are true, and the reason correctly explains why information in short-term memory is primarily encoded through auditory representation.

32. c) Tracing the processing and storage of information.
Explanation: The information-processing approach to human memory focuses primarily on understanding how information is processed and stored in the human mind. It views memory as analogous to a computer, with information passing through various stages of processing, such as encoding, storage, and retrieval. This approach emphasizes the cognitive processes involved in memory, such as attention, perception, encoding, storage, and retrieval. It seeks to understand how information is transformed and manipulated within the human mind, rather than focusing solely on emotional or biological aspects of memory.

33. c) It can store information for a very brief period.
Explanation: Sensory memory is the earliest stage of memory processing and is characterized by its ability to briefly hold sensory information from the environment in its raw sensory form. It acts as a buffer between the external environment and the subsequent stages of memory processing. Sensory memory has a very large capacity to store incoming sensory information but only retains this information for a very short duration, typically ranging from milliseconds to a few seconds. This brief retention period allows sensory information to be transferred to other memory systems for further processing and storage.

34. c) (A) is true, but (R) is false.
Explanation: Assertion (A) is true because forgetting can indeed occur due to breakdowns in encoding, storage, or retrieval processes. Encoding refers to the process of converting sensory input into a form that the brain can process and store. Storage involves maintaining encoded information over time. Retrieval involves accessing stored information when needed. If any of these processes fail or are disrupted, forgetting can occur.

Reason (R) is false because short-term memory is not a relatively permanent storehouse of knowledge. Short-term memory, also known as working memory, is a temporary storage system that holds a limited amount of information for a short duration, typically around 15-30 seconds. It is involved in the active processing of information and is transient, meaning that information is either transferred to long-term memory or forgotten if not rehearsed or encoded further.

35. c) Transduction.
Explanation: Transduction is the process by which sensory neurons convert environmental stimuli, such as light, sound, or touch, into neural impulses that can be interpreted by the brain. Sensory receptors in various parts of the body detect different types of stimuli and convert them into electrical signals that can be transmitted along the nervous system to the brain for processing. This process allows organisms to perceive and respond to their environment.

36. c) After one-tenth of a second.
Explanation: George Sperling's experiments on visual sensory memory indicated that the iconic memory, a component of visual sensory memory, starts to decay rapidly after approximately one-tenth of a second. In his experiments, participants were briefly shown a matrix of letters and then asked to recall them. Even though participants could report only a portion of the letters immediately after the display, they were able to recall more letters when cued immediately after the display ended, suggesting that the information was briefly held in iconic memory before decay occurred.

37. c) (A) is true, but (R) is false.
Explanation: Assertion (A) is True: The information processing approach is a prominent theory in cognitive psychology that compares the human mind to a computer system. It emphasizes how information is received (input), processed, stored in memory, retrieved, and used (output). This analogy helps us understand how we perceive, learn, remember, and make decisions.

Reason (R) is False: Encoding, storage, and retrieval are fundamental concepts in the information processing approach.
Encoding refers to how information is received and transformed into a format the memory system can handle. Storage involves retaining the encoded information over time. Retrieval is the process of accessing the stored information when needed.

38. d) The memory faded too quickly to recall all the letters.
Explanation: In George Sperling's iconic study on sensory memory, he demonstrated that the human visual system can perceive and store a large amount of information in a very short time frame, but this information decays almost as quickly as it is acquired. Participants were briefly shown a grid of nine letters (three rows of three) and were then asked to recall as many letters as possible. On average, participants could only recall about four to five letters out of the nine. The primary reason for this was not poor eyesight or improper encoding of the memory; rather, it was the rapid fading of the sensory memory. The sensory memory, specifically the iconic memory for visual stimuli, has a high capacity but a very short duration.

39. d) To allow for uninterrupted visual information.
Explanation: Sensory memory serves as a temporary buffer for incoming sensory information, holding it briefly before it either decays or is transferred to short-term memory. It plays a crucial role in maintaining a continuous flow of perceptual experience, allowing for uninterrupted processing of sensory input. Without sensory memory, our perception of the world would be fragmented, as each new sensation would overwrite the previous one before it could be processed or integrated into a coherent experience. Therefore, sensory memory is important for ensuring the continuity and coherence of our perception of the environment.

40. b) Auditory sensory memory
Explanation: Auditory sensory memory, also known as echoic memory, has a longer duration compared to other sensory memory systems, such as visual sensory memory (iconic memory). Auditory sensory memory can retain auditory information for several seconds, possibly up to 10 seconds or longer, depending on the conditions and individual differences. This longer duration allows for the temporary storage of auditory information, providing a brief buffer before it is either processed further or fades away.

41. d) It pauses the stream of visual information during blinking.
Explanation: Sensory memory, specifically visual sensory memory (iconic memory), plays a role in the experience of blinking by temporarily pausing the stream of visual

information. When a person blinks, the eyelids close, obstructing the visual field and interrupting the reception of visual stimuli. However, during this brief interruption caused by blinking, sensory memory helps maintain a visual representation of the environment. Iconic memory stores a brief trace of the visual scene that was present immediately before blinking, allowing for continuity in perception despite the momentary interruption caused by blinking. Therefore, sensory memory contributes to the seamless experience of visual perception by bridging the gap during the blink.

42. c) Brief and unaltered state.
Explanation: Sensory memory retains information briefly and in an unaltered state before transferring it to short-term or long-term memory for further processing and storage. It serves as a temporary holding buffer where sensory stimuli, such as sights, sounds, and tactile sensations, are briefly maintained in their original form. This retention period in sensory memory lasts for a fraction of a second to a few seconds, allowing for the initial processing of sensory information before it either decays or gets transferred to other memory stores. Therefore, sensory memory ensures that incoming sensory input is briefly available for further cognitive processing and integration into higher-level memory systems.

43. d) Iconic.
Explanation: Sperling's experiment with briefly presented rows of letters demonstrated the existence of iconic memory, which refers to the visual sensory memory system responsible for briefly retaining visual information. In his study, participants were shown a matrix of letters arranged in three rows for a very short duration. Despite the brief exposure, participants could recall some of the letters accurately, suggesting the presence of a brief visual memory trace. This iconic memory allows for the retention of visual stimuli for a fraction of a second before it fades or gets transferred to other memory stores for further processing.

44. a) Both (A) and (R) are true and (R) is the correct explanation of (A).
Explanation: Assertion (A) is True: Short-term memory and working memory are often used interchangeably. Both terms refer to the cognitive system responsible for holding a limited amount of information in an active state for a short period (typically seconds to tens of seconds).
Reason (R) is True and Explains (A): The key function of working memory is to hold information that is currently being used or processed. This might involve manipulating information, rehearsing it, or using it to complete a task.
45. b) To store information for a lifetime.

Explanation: Long-term memory is responsible for storing information over long periods, potentially for a lifetime. Unlike short-term memory, which has limited capacity and stores information temporarily, long-term memory has a vast capacity and can hold information for extended periods, from minutes to years or even a lifetime. It plays a crucial role in retaining knowledge, experiences, skills, and other types of information over time.

46. d) Elaborative rehearsal.
Explanation: Elaborative rehearsal involves actively relating new information to existing knowledge or memories, which helps to encode it more effectively into long-term memory. Unlike maintenance rehearsal, which simply involves repeating information to keep it in short-term memory, elaborative rehearsal involves deeper processing, making connections, and attaching meaning to the information. This process enhances the likelihood of transferring information from short-term to long-term memory, where it can be stored for longer periods.

47. c) Semantic coding.
Explanation: Semantic coding refers to encoding information by its meaning, allowing individuals to relate new information to their existing knowledge or experiences. This type of encoding involves understanding the significance or relevance of the information and connecting it to concepts or ideas already stored in long-term memory. Semantic coding facilitates deeper processing and better retention of information compared to surface-level encoding methods.

48. b) Retroactive interference.
Explanation: Retroactive interference happens when newly learned information disrupts the recall of previously stored information. This interference occurs when recently acquired memories interfere with the retrieval of older memories. For instance, if you learn a new password and then struggle to remember your old password, retroactive interference may be occurring. The new information is interfering with the retrieval of the old information. This phenomenon highlights how memory retrieval can be influenced by the introduction of new information over time.

49. d) Memory in natural contexts.
Explanation: Memory in natural contexts refers to the study of memory for meaningful information, such as sentences, paragraphs, and stories, within real-life settings. Unlike controlled laboratory experiments that often use artificial stimuli, studying memory in natural contexts aims to understand how people remember and recall information

encountered in everyday life. This approach allows researchers to investigate memory processes as they naturally occur, providing insights into the complexities of human memory functioning in realistic scenarios.

50. c) Constructive memory.
Explanation: Constructive memory involves the process of adding new information to stored memories, often resulting in the construction of a more detailed or richer memory. This process can lead to the incorporation of additional details, perspectives, or interpretations into existing memories, influencing how they are recalled or reconstructed. Constructive memory highlights the dynamic nature of memory retrieval, where memories are not simply retrieved but are actively reconstructed based on available information and cognitive processes. It plays a significant role in understanding how memories can be influenced or distorted by various factors, such as expectations, beliefs, and experiences.

51. b) Inference.
Explanation: Inference refers to the process by which people fill in missing pieces of information in a story or situation using their general knowledge stored in long-term memory. When faced with incomplete or ambiguous information, individuals often rely on their existing knowledge and make inferences to bridge gaps or make sense of the information presented to them. These inferences are based on cognitive processes that involve drawing conclusions, making assumptions, or generating hypotheses to complete the overall understanding of a given scenario. Inferences play a crucial role in comprehension, problem-solving, and decision-making, allowing individuals to interpret and make sense of the world around them based on the information available.

52. c) High-knowledge subjects remembered more information.
Explanation: In the experiment involving a fictitious baseball game, researchers found that high-knowledge subjects remembered more information compared to low-knowledge subjects. This outcome suggests that individuals with a greater understanding of the topic at hand, in this case, baseball, were better able to recall details related to the game. High-knowledge subjects likely had more relevant schema or existing knowledge structures related to baseball, allowing them to encode, store, and retrieve information more effectively. This finding aligns with the concept of constructive memory, where individuals use their prior knowledge to fill in gaps and enhance memory recall.

53. c) (A) is true, but (R) is false.
Explanation: Assertion (A) is True: Periodic retrieval of information, often referred to as

spaced repetition, does help ensure retention. Retrieval strengthens memory traces. When you actively recall information from memory, it strengthens the neural connections associated with that information. This makes it more likely you'll remember it later.Spaced repetition combats forgetting. Memories tend to decay over time. Periodically retrieving information helps counteract this forgetting process and refresh the memory trace.

Reason (R) is False: While reviewing information during learning can be beneficial, it's not sufficient to guarantee placement in long-term memory. Depth of processing matters. Simply reviewing information passively might not lead to deep encoding and strong memory traces. Engaging with the material actively, elaborating on it, or connecting it to existing knowledge can improve long-term retention.

54. b) Engram.
Explanation: Engram refers to the physical change in the brain associated with the storage of new information. This concept is fundamental in understanding how memories are formed and stored in the brain. The term was coined by the German neuroscientist Richard Semon in the early 20th century. According to the theory, when new information is learned or a memory is formed, it leaves a lasting trace or physical imprint in the neural circuits of the brain. This physical representation of memory is the engram. Engrams can involve changes in synaptic connections between neurons, alterations in neurotransmitter release, or structural modifications in brain regions involved in memory processing. Understanding engrams is crucial for unraveling the mechanisms underlying learning and memory processes.

55. b) Anterograde amnesia.
Explanation: Anterograde amnesia is a type of memory disorder characterized by the inability to form new memories or store new information after a specific event, such as a brain injury or trauma. Individuals with anterograde amnesia may have intact memories of events that occurred before the event that caused the amnesia (retrograde amnesia), but they struggle to create new memories or remember events that occur afterward. This condition can severely impact daily functioning and independence, as affected individuals may have difficulty learning new information, remembering recent events, or forming new memories of people encountered or experiences had after the onset of amnesia.

56. b) Karl Lashley.
Explanation: Karl Lashley conducted pioneering research on memory and the brain by making lesions in different areas of rats' brains to study memory for a maze. His work

aimed to identify the specific brain regions involved in memory formation and storage. Lashley's experiments, particularly his research on the role of the cerebral cortex in learning and memory, laid the foundation for our understanding of the neural basis of memory. While William Scoville, Brenda Milner, and H.M. (Henry Molaison) are notable figures in memory research, they are more closely associated with studies involving human patients, particularly H.M., who had profound amnesia following brain surgery.

57. c) Acetylcholine.
Explanation: Acetylcholine has attracted attention in relation to memory disorders, particularly in Alzheimer's disease. Alzheimer's disease is characterized by a progressive decline in memory and cognitive function, and one of the hallmarks of the disease is a significant reduction in acetylcholine levels in the brain. Acetylcholine plays a crucial role in various cognitive functions, including learning and memory, by acting as a neurotransmitter in the brain. Dysfunction of the cholinergic system, which involves the synthesis, release, and reception of acetylcholine, is believed to contribute to the cognitive impairments observed in Alzheimer's disease.

58. c) Choline improved memory in most subjects.
Explanation: Choline is a precursor to acetylcholine, a neurotransmitter involved in memory and cognitive function. Some studies have investigated the effects of choline supplementation on memory performance. In the scenario described, the main finding suggests that choline supplementation improved memory in most subjects. This finding aligns with the notion that acetylcholine plays a crucial role in memory processes, and increasing its availability through choline supplementation may enhance memory function in some individuals. However, it's important to note that individual responses to choline supplementation may vary, and further research is needed to fully understand the effects of choline on memory.

59. c) Sensory memory.
Explanation: Sensory memory is the memory system that registers information from the five senses, including visual information that lasts less than 1 second. It acts as a buffer, holding sensory information briefly so that it can be processed and transferred to short-term memory for further processing. Sensory memory allows individuals to retain a brief snapshot of sensory stimuli, such as the sight of a passing car or the sound of a door slamming, before they are either forgotten or encoded into longer-term memory stores. It provides the initial raw material for perception and cognition, allowing individuals to make sense of their environment and respond to stimuli in real-time.

60. b) About 15 to 20 seconds.
Explanation: Short-term memory, also known as working memory, typically holds information for a brief duration, generally estimated to be about 15 to 20 seconds. However, this duration can vary depending on factors such as the complexity of the information, distractions, and individual differences in cognitive abilities. Without rehearsal or active processing, information in short-term memory is susceptible to decay and displacement, meaning it may be forgotten or overwritten by new information after a short period.

61. b) Encoding.
Explanation: Encoding refers to the process of transforming sensory input into a form that can be stored in memory. It involves converting information from the external environment into a neural code that the brain can process and retain. Encoding is a crucial initial step in the memory process, as it determines how effectively information can be stored and later retrieved. Encoding can occur in various forms, including visual, auditory, semantic, and motor encoding, depending on the nature of the information and the sensory modalities involved.

62. c) Information-processing approach.
Explanation: The information-processing approach to human memory draws an analogy between human cognitive processes and the operations of a computer. This approach views the mind as an information-processing system that takes in sensory input, processes it, stores it, and retrieves it when needed, similar to how a computer processes data. It emphasizes the flow of information through various stages of processing, such as encoding, storage, and retrieval, and explores the mechanisms underlying memory and cognition in terms of information processing.

63. d) Portrayed the event as more serious than it had actually been.
Explanation: Loftus and Palmer's famous study on memory and language demonstrated how the wording of questions can influence an individual's recollection of an event. In their experiment, participants watched a film of a car accident and were later asked to estimate the speed of the vehicles using different verbs such as "smashed," "collided," "bumped," "hit," or "contacted."
The key finding was that the verb used in the question affected the participants' speed estimates and their perception of the accident's severity. When the word "smashed" was used, participants gave higher speed estimates and were more likely to report seeing broken glass (even though there was none), compared to when less intense verbs were

used. This demonstrated that the verb “smashed” led participants to develop memories of the accident that portrayed it as more serious than it actually was.

64. b) Transduction, the transformation of stimuli into neural impulses.
Explanation: In sensory memory, encoding refers to the initial process of converting external stimuli from the environment into a form that the brain can understand and process. This process is known as transduction. Transduction involves the transformation of sensory input (such as light waves, sound waves, or tactile sensations) into neural impulses that can be interpreted by the brain.
For example, in the visual system, light waves are detected by photoreceptors in the retina and converted into electrical signals. Similarly, in the auditory system, sound waves are captured by hair cells in the cochlea and converted into neural impulses. These neural impulses are then transmitted to the brain for further processing.

65. b) He presented a high tone to signal recall of the top row, a medium tone for the middle row, and a low tone for the bottom row.
Explanation: George Sperling conducted classic experiments in the early 1960s to demonstrate the capacity and duration of visual sensory memory, also known as iconic memory. In his experiments, Sperling showed participants a 3x3 grid of letters for a brief period (about 50 milliseconds) and then asked them to recall the letters. This method is known as the whole report technique, where participants were typically able to recall only 3 to 4 of the 9 letters, which suggested limited capacity.
However, Sperling hypothesized that the limitation was not in the capacity of iconic memory but in the retrieval process. To test this, he used a partial report technique. In this technique, after briefly displaying the grid of letters, he immediately followed with a high, medium, or low tone. Each tone indicated which row of letters (top, middle, or bottom) the participants were to recall. Participants could typically recall nearly all the letters from the indicated row, suggesting that they had initially encoded all of the letters but were unable to retrieve them all quickly.

66. a) declarative; nondeclarative
Explanation: Psychologists categorize memory into two main types: declarative memory and nondeclarative memory.
Declarative memory (also known as explicit memory) refers to memories that can be consciously recalled and articulated. This type of memory includes:
Episodic memory: Memory of personal experiences and specific events, including the context in which they occurred.

Semantic memory: Memory of facts, concepts, and knowledge about the external world that is independent of personal experience.
Nondeclarative memory (also known as implicit memory) involves memories that are not consciously recalled but affect our behavior and skills. This type of memory includes:
Procedural memory: Memory for the performance of tasks, such as riding a bike or typing on a keyboard, which can be executed without conscious awareness.

67. b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
Explanation: Assertion (A): Pattern recognition involves comparing the raw sensory information in sensory memory with patterns stored in long-term memory to make it meaningful. This statement is true. Pattern recognition is a cognitive process where sensory input is matched to stored patterns in long-term memory, allowing us to understand and interpret what we perceive.

Reason (R): The transfer of information from sensory to short-term memory is governed by two control processes: attention and maintenance rehearsal. This statement is also true. Attention is the process that selects which sensory information will be transferred to short-term memory, and maintenance rehearsal is the process of repetitively focusing on or thinking about information to keep it in short-term memory and possibly encode it into long-term memory.
However, the reason provided (R) does not directly explain the assertion (A). The process of pattern recognition (A) is about matching sensory input to long-term memory patterns, while the reason (R) explains how information is transferred from sensory to short-term memory, focusing on different aspects of cognitive processing.

68. c) Short-term memory is like a worktable, holding only a limited number of items being worked with at a time.
Explanation: The analogy of the chef's kitchen is used to explain the limited capacity of short-term memory. Just as a chef's worktable can hold only a limited number of ingredients or dishes at a time, short-term memory can hold only a limited amount of information that is currently being processed or used. This analogy highlights the idea that short-term memory is a temporary workspace with restricted capacity, much like a chef's worktable where only a few items can be actively handled before they need to be put away or replaced with new items. This helps in understanding that short-term memory is not a permanent storage system but rather a dynamic and temporary workspace.

69. b) They could remember how to perform skills but not that they had done them.

Explanation: Researchers studying amnesic patients, including the famous case of H.M., discovered that these individuals were able to learn and improve at certain motor skills over time, even though they had no conscious memory of having practiced these skills. This phenomenon highlights a distinction between different types of memory systems: declarative memory (memory of facts and events, which was impaired in H.M.) and procedural memory (memory of how to perform tasks, which remained intact in H.M.). Despite their inability to recall the practice sessions or recognize having performed the tasks before, amnestics could still acquire new skills and exhibit improvement, indicating that procedural memory operates independently of the conscious recollection involved in declarative memory.

70. c) They used a distractor task to prevent rehearsal.
Explanation: In the Peterson and Peterson experiment, researchers measured the duration of unrehearsed information in short-term memory by having subjects memorize a series of consonant trigrams (e.g., “CHJ”) and then immediately engage in a distractor task. This distractor task typically involved counting backward by threes from a given number, which effectively prevented the subjects from rehearsing the trigrams. By varying the length of time the subjects engaged in the distractor task before being asked to recall the trigrams, Peterson and Peterson were able to determine how long information remained in short-term memory without rehearsal. They found that the ability to recall the trigrams significantly declined as the duration of the distractor task increased, demonstrating the transient nature of unrehearsed information in short-term memory.

71. a) Semantic coding
Explanation: Semantic coding refers to the process of remembering the general meaning of words and sentences, rather than the exact wording. This type of coding focuses on the meaning and concepts associated with the information being processed. When people use semantic coding, they tend to remember the gist or the underlying meaning of the material, which can be more useful for comprehension and long-term retention. For instance, when reading a passage, semantic coding would involve recalling the main ideas and themes rather than the exact phrases or sentences. This is in contrast to verbatim coding, which involves remembering the precise words and syntax used.

72. b) Imagery.
Explanation: Imagery involves creating vivid mental pictures to represent information that needs to be remembered. Waiters like John Conrad might use this technique by visualizing each order as a distinct and memorable image. For example, they might picture a specific

dish in their mind or associate it with a visual scenario that helps them recall the details later. This technique leverages the brain's strong ability to remember visual information, making it easier to recall the orders accurately without writing them down. Imagery is particularly effective in enhancing memory retention and recall, especially in high-pressure situations like taking multiple dinner orders.

73. c) (A) is true, but (R) is false.
Explanation: Assertion (A) is true. Mnemonics are techniques used to create organization in long-term memory, which can significantly improve recall. Mnemonics work by creating associations and structures that make it easier to retrieve information.

Reason (R) is false. While long-term memory can have inherent organization, especially through natural learning processes and meaningful connections, mnemonics are still highly valuable. They aid in imposing additional structure and enhancing the organization of information, making it more accessible and easier to recall. The use of mnemonics does not imply that long-term memory lacks organization; rather, it builds on and enhances the natural organization of memory.

74. a) Retrieval is facilitated by providing retrieval cues.
Explanation: Tulving and Pearlstone's study showed that when participants were given retrieval cues, their ability to recall information from long-term memory improved significantly. This research highlighted the importance of retrieval cues in accessing stored information, demonstrating that memory retrieval is not just dependent on how information is stored, but also on the presence of appropriate cues that can trigger the recall process. This finding underscores the role of contextual and associative links in enhancing memory retrieval.

75. b) Proactive interference.
Explanation: Proactive interference happens when previously learned information disrupts the ability to remember new information. This phenomenon occurs because existing memories can interfere with the formation and retrieval of newer memories. For instance, if you have learned one set of information and then try to learn another similar set, the first set may interfere with your ability to recall the second set accurately. This type of interference is a common challenge in learning and memory processes. In contrast, retroactive interference occurs when new information interferes with the recall of old information.

76. c) Flashbulb memories.
Explanation: Flashbulb memories are highly detailed and vivid memories of significant and emotional events. These memories are often triggered by distinctive recall cues and can include precise details about the context in which the person first learned about the event. The term “flashbulb” suggests the clarity and photographic quality of these memories, as if a snapshot was taken at the moment the event occurred. Examples of flashbulb memories include remembering where you were and what you were doing when you heard about a major historical event, such as the 9/11 attacks or the assassination of a prominent figure. These memories are characterized by their longevity and the strong emotional impact associated with the events.

77. b) Distinctive cues that are associated with only one thing.
Explanation: According to the theory of encoding specificity, retrieval cues that are distinctive and unique are typically the most effective for facilitating recall. These cues create strong associations with specific memories because they are closely tied to the encoded information. When these distinctive cues are present during retrieval, they trigger the retrieval of the associated memory more effectively than common cues that may be linked to multiple memories. Therefore, distinctive cues provide a clear and direct pathway to the targeted memory, enhancing the likelihood of successful recall.

78. c) The proper retrieval cues are not available.
Explanation: Retrieval failure theory posits that information is stored in long-term memory but cannot be accessed without the appropriate retrieval cues. This theory highlights the importance of contextual and associative links that facilitate the recall of stored information. When the right cues are absent, even well-stored memories may remain inaccessible. This contrasts with theories suggesting that memories are erased or have decayed, focusing instead on the retrieval process and the necessity of cues to trigger the memory recall.

79. c) General knowledge about the material in the passage and the original passage.
Explanation: Constructive memory refers to the process by which individuals use both the original information provided and their own general knowledge or schemas to reconstruct a memory. This means that when recalling a passage, people often fill in gaps with details that make sense based on their broader understanding of the topic, as well as the specific details they remember from the passage. This process can lead to the creation of memories that are coherent and meaningful but not always entirely accurate to the original source.

80. c) Schemas help us remember information by providing a framework.
Explanation: Schemas are cognitive frameworks or mental structures that help individuals organize and interpret information. They influence memory processes by providing a framework or structure for encoding, storing, and retrieving information. Schemas help individuals make sense of new information by assimilating it into existing knowledge structures. While schemas can contribute to accurate recall by providing a context for understanding and remembering information, they can also lead to distortions in memory when new information is interpreted or remembered in a way that is consistent with existing schemas but may not accurately reflect reality. Therefore, while schemas can facilitate memory by providing a framework, they can also influence memory accuracy, leading to both accurate and distorted recall depending on how the information is processed and interpreted in relation to existing schemas.

81. b) They produce inaccuracies or changes in the material.
Explanation: Distortions in memory involve inaccuracies or alterations in the recall of information compared to the original event or stimulus. These inaccuracies can manifest as additions, omissions, or modifications to the material remembered. Distortions can occur due to various factors, such as the influence of schemas, biases, suggestibility, or errors in encoding and retrieval processes. While some distortions may result from logical or orderly patterns, the key characteristic is that they deviate from the accuracy of the original information, leading to discrepancies between the remembered and actual events.

82. a) Both (A) and (R) are true and (R) is the correct explanation of (A).
Explanation: Both Assertion (A) and Reason (R) are true, and Reason (R) provides the correct explanation for Assertion (A).
Assertion (A) states that eyewitness testimony assumes witnesses can accurately store and recall information about a crime they have seen, similar to a videotape recorder. This is true, as eyewitness testimony is often regarded as reliable in legal settings.
Reason (R) explains that research by Elizabeth Loftus and her coworkers has shown that construction and distortion processes can create inaccuracies in eyewitness memory.
This research indeed supports the assertion that eyewitness memory is not as accurate as assumed, similar to a videotape recorder.

83. b) Elaborative rehearsal leads to greater chances of retrieval.
Explanation: Elaborative rehearsal involves actively engaging with the material to be remembered by making connections between new information and existing knowledge or by relating it to personal experiences. This deeper level of processing promotes better encoding of the information and enhances the likelihood of successful retrieval. In contrast,

simple repetition, while useful for maintaining information temporarily in short-term memory, may not lead to robust encoding or meaningful connections that facilitate long-term retention and recall. Therefore, elaborative rehearsal offers an advantage over simple repetition by increasing the chances of successful retrieval through deeper processing and encoding of information.

84. d) Periodic retrieval facilitates accurate recall when needed.
Explanation: Periodic retrieval involves regularly practicing recalling information from memory. This process strengthens memory traces and helps solidify the connections between neurons, making the information more easily retrievable in the future. By engaging in periodic retrieval, individuals reinforce their memory and increase the likelihood of accurate recall when needed. This process is essential for long-term retention of information, as it helps prevent forgetting and ensures that memories remain accessible over time. Additionally, periodic retrieval promotes deeper encoding of information and aids in consolidating memories, leading to more durable and robust retention.

85. c) It allows items in a list to be linked with each other.
Explanation: The link method, also known as the chaining method, involves creating associations between items in a list by linking them together in a logical or imaginative sequence. Each item is linked to the next item in the list, forming a chain of associations. This technique takes advantage of the human brain's natural tendency to remember associations and sequences, making it easier to recall the entire list by mentally following the chain of links. By linking items together, the link method provides a structured and organized approach to memorization, enhancing recall by creating meaningful connections between the items in the list.

86. c) By forming images or associations between items.
Explanation: In the link method, each item in the list is associated or linked to the next item in a memorable way. This is often achieved by forming vivid mental images or associations between the items. Each association serves as a link between adjacent items in the list, creating a chain of associations that facilitates recall. These associations can be based on similarities, contrasts, rhymes, sounds, or any other mnemonic device that helps make the connections between items memorable. The key is to create strong and distinctive associations that make it easy to mentally follow the chain of links and recall the items in the list in the correct order. Therefore, forming images or associations between items is the typical way items are linked together in the link method.

87. c) 150 percent

88. b) Those who slept immediately after learning had better recall.
Explanation: The Jenkins and Dallenbach study found that participants who slept immediately after learning had better recall compared to those who stayed awake. This suggests that sleep plays a beneficial role in memory consolidation, particularly for tasks involving the retention of newly acquired information. The study demonstrated that sleep facilitates the transfer of information from short-term memory to long-term memory, leading to enhanced recall performance.

89. c) Brain lesions and their influence on memory in rats
Explanation: Karl Lashley primarily studied the effects of brain lesions on memory in rats. He conducted experiments where he removed parts of rats' brains and observed how this affected their ability to perform previously learned tasks or remember information. These studies aimed to identify specific brain areas associated with memory function. His work laid the groundwork for understanding the neural basis of memory and the concept of the engram, or the physical representation of memory in the brain.

90. b) It is a memory disorder where people cannot form new memories, and studying it helps researchers understand memory processes.
Explanation: Anterograde amnesia is a memory disorder characterized by the inability to form new memories after the onset of the condition, while past memories remain intact. Studying anterograde amnesia is significant in the study of memory because it provides valuable insights into the processes involved in memory formation and consolidation. By examining how individuals with anterograde amnesia encode and retain information, researchers can better understand the underlying mechanisms of memory, such as the role of different brain regions and neurotransmitter systems. Additionally, studying anterograde amnesia can help identify potential treatments or interventions to improve memory function in individuals with this condition.

91. d) Severe anterograde amnesia.
Explanation: Patient H.M. underwent brain surgery that removed part of the temporal lobe and the hippocampus to alleviate severe epilepsy. However, this surgery resulted in severe anterograde amnesia for H.M. Anterograde amnesia is the inability to form new memories after the onset of the condition, while retrograde amnesia is the loss of memories that were formed before the onset of the condition. In H.M.'s case, the surgery affected his ability to encode and retain new memories, leading to profound difficulties in forming new long-term memories.

92. a) In the hippocampus
Explanation: Most of the chemical changes involved in storing new memories occur in the hippocampus, a region of the brain associated with memory formation and consolidation. The hippocampus plays a crucial role in the initial encoding of memories before they are transferred to other brain regions for long-term storage.

93. c) mammillary bodies.
Explanation: Korsakoff's syndrome is a neurological disorder caused by severe deficiency of thiamine (vitamin B1), often associated with chronic alcoholism. Thiamine deficiency leads to damage in certain brain regions, particularly those involved in memory and learning. In Korsakoff's syndrome, one of the areas affected is the mammillary bodies, which are small structures located in the hypothalamus. Damage to the mammillary bodies contributes to the characteristic memory impairments observed in individuals with Korsakoff's syndrome. While the hippocampus is crucial for memory formation and retrieval, and the basal ganglia are involved in motor control and learning, in Korsakoff's syndrome, the damage is more prominently seen in the mammillary bodies due to thiamine deficiency.

94. a) making the material you are trying to memorize personally meaningful to you.
Explanation: The self-referencing effect is a phenomenon in memory research where individuals tend to have better memory recall for information that is personally relevant or meaningful to them. When people relate new information to themselves, their personal experiences, or their beliefs and values, they are more likely to remember that information compared to when it's presented in a neutral or unrelated context. This strategy of making the material personally relevant is often effective in enhancing memory retention and recall.

95. c) acrostic.
Explanation: An acrostic is a mnemonic device that helps in remembering information by creating a phrase where the first letter of each word corresponds to the first letter of the information to be remembered. In the given example, "Every good boy does fine" is an acrostic used to remember the notes E, G, B, D, and F for the lines of the treble clef in music notation. Each word in the phrase corresponds to one of the notes, making it easier to recall the sequence.

96. a) Determining the origin of a memory, whether it is real or imagined
Explanation: Source monitoring refers to the cognitive process of determining the origin or

source of a memory, including whether the memory is based on real events or imagined ones. It involves evaluating the context, circumstances, and details associated with a memory to discern its authenticity and accuracy. Source monitoring errors can occur when individuals incorrectly attribute a memory to a specific source or misremember the source of information, leading to memory distortions or inaccuracies.

97. a) 7 plus or minus 2 items.
Explanation: The capacity of short-term memory, as proposed by psychologist George A. Miller in his seminal paper "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," is commonly estimated to be around 7 plus or minus 2 items. This means that most people can hold approximately 5 to 9 items in their short-term memory at any given time. This capacity is often affected by factors such as the complexity of the items being remembered, individual differences, and the presence of distractions.

98. b) Deep processing.
Explanation: The levels-of-processing model, proposed by Craik and Lockhart in 1972, suggests that the depth of processing affects how well information is encoded and retained in memory. Deep processing involves the meaningful analysis and elaboration of information, such as relating it to personal experiences, making connections with existing knowledge, or considering its implications and associations. This type of processing leads to better memory retention because it results in more elaborate and durable memory traces compared to shallow processing, which involves superficial or surface-level processing of information. Deep processing encourages a more thorough engagement with the material, facilitating better encoding and subsequent recall.

99. c) Leading questions on memory recall.
Explanation: The misinformation effect refers to the phenomenon where misleading information presented after an event can distort or alter an individual's memory of that event. In the study by Loftus and Palmer, participants watched a video of a car accident and were later asked questions about the event. When the wording of the questions included misleading information (e.g., "How fast were the cars going when they smashed into each other?" vs. "How fast were the cars going when they hit each other?"), participants' responses were influenced, and their memory of the event became distorted. This demonstrated how leading questions can alter memory recall, leading individuals to incorporate false or misleading details into their recollections.

100. a) Memories of traumatic events that are vivid and detailed.
Explanation: Flashbulb memories are highly vivid and detailed recollections of significant and emotionally charged events. These memories are often formed around events that are personally or culturally significant, such as major historical events, significant life events, or traumatic experiences. Despite their vividness, flashbulb memories are not necessarily accurate in every detail and can be influenced by factors such as emotion, rehearsal, and the passage of time. However, they are characterized by their enduring clarity and the strong emotional impact associated with the remembered event.

101. a) Consolidation.
Explanation: Consolidation is the process by which memories are strengthened and stabilized, allowing them to be transferred from short-term memory to long-term memory storage. During consolidation, newly acquired information is integrated with existing knowledge, and connections between neurons are strengthened through rehearsal and meaningful encoding processes. Rehearsal involves repeatedly reviewing or practicing the information, while meaningful encoding involves relating the new information to existing knowledge or personal experiences, making it more likely to be retained in long-term memory. Consolidation is a dynamic and ongoing process that continues after initial encoding, as memories are further reinforced and integrated over time.

102. a) Serial position effect.
Explanation: The serial position effect refers to the phenomenon where individuals are more likely to recall items that are presented at the beginning (primacy effect) and end (recency effect) of a list, compared to those presented in the middle. The primacy effect occurs because items presented early in the list have had more opportunity for rehearsal and encoding into long-term memory, leading to better retention. The recency effect occurs because items presented at the end of the list are still in short-term memory and can be recalled easily. Items in the middle of the list are less likely to be remembered because they have not received as much attention during encoding and may be more susceptible to interference from other items.

103. c) Dissociative amnesia.
Explanation: Dissociative amnesia refers to a type of amnesia characterized by the partial or complete inability to recall important personal information, usually associated with traumatic or stressful events. In cases of dissociative amnesia, memories of traumatic events may be initially repressed or blocked from conscious awareness as a psychological defense mechanism to protect the individual from overwhelming emotions or distress.

However, these memories may later resurface or be recovered, often through therapy, hypnosis, or other therapeutic techniques. The recovery of repressed memories can be a complex and controversial process, and the accuracy and reliability of such memories may vary.

104. b) Explicit memory.
Explanation: Explicit memory, also known as declarative memory, involves the conscious recall of facts and events. It encompasses memories that can be consciously retrieved and verbalized. Explicit memory is further divided into two main types: semantic memory and episodic memory. Semantic memory refers to general knowledge about the world, including facts, concepts, and meanings, whereas episodic memory involves the recollection of specific events or experiences tied to particular times and places. Both semantic and episodic memories are part of explicit memory because they can be consciously recalled and described by individuals. Explicit memory contrasts with implicit memory, which involves the unconscious or automatic recall of information, such as procedural memory for skills and habits.

105. c) Chronological confusion.
Explanation: Chronological confusion refers to the inability to accurately place events in their proper temporal order or sequence. Individuals experiencing chronological confusion may recall specific events or memories but have difficulty organizing them chronologically, such as determining when each event occurred in relation to others. This can lead to difficulties in remembering the correct sequence of events or the timing of particular occurrences. Chronological confusion can occur in various contexts, including memory disorders, cognitive impairment, or as a result of stress or emotional factors. It is a common challenge in memory recall and can affect the accuracy and coherence of one's memory retrieval.

106. a) Knowledge and awareness of one's own memory processes.
Explanation: Metamemory encompasses individuals' knowledge, awareness, and understanding of their own memory processes, including their memory strengths, weaknesses, strategies, and monitoring of memory performance. It involves the ability to reflect on and evaluate one's memory functioning, make judgments about the likelihood of remembering information, and employ effective memory strategies to enhance learning and retrieval. Metamemory includes various aspects such as knowledge about memory principles, monitoring of memory performance, and regulation of memory processes. It plays a crucial role in self-regulated learning and adaptive memory behavior, allowing

individuals to optimize their memory performance and make informed decisions about memory-related tasks.

107. a) Amygdala.
Explanation: The amygdala is a key brain structure involved in processing emotions, particularly fear and threat-related stimuli. It plays a crucial role in the formation and consolidation of emotional memories, including those associated with traumatic or highly emotional events. The amygdala's involvement in the encoding and storage of emotional memories can contribute to the development and persistence of conditions such as post-traumatic stress disorder (PTSD), where individuals may experience intrusive and distressing memories of traumatic events. Dysfunction or hyperactivity of the amygdala has been implicated in various emotional and anxiety-related disorders, highlighting its significance in emotional processing and memory formation.

108. d) Cultural memory conformity
Explanation: The term for the phenomenon described is "Cultural memory conformity." Cultural memory conformity refers to the phenomenon in which a person's memories are influenced by cultural factors and social expectations, leading them to conform their memories to align with societal norms or beliefs. Individuals may recall events in a way that fits with the collective memory of their culture or social group, even if it deviates from their actual experiences.

109. c) Fugue or dissociative amnesia.
Explanation: Fugue or dissociative amnesia is a type of amnesia characterized by sudden, unexpected travel away from home, accompanied by an inability to recall one's past, including personal identity and important autobiographical information. Individuals experiencing dissociative fugue may appear bewildered or disoriented and may assume a new identity, often in a different location, without awareness of their previous life. This condition is typically precipitated by significant stress or trauma and is considered a dissociative disorder. Unlike transient global amnesia, which involves temporary memory loss without identity disturbance, fugue or dissociative amnesia results in a profound disruption of personal identity and memory.

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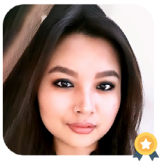

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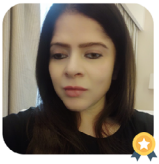

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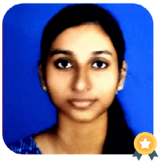

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