(A) Explain some of the difficulties involve in memory for eye-witness testimony and discuss why memory on this task is constructive.

Eye-witness testimony tends to require people to remember details that would generally go unnoticed (e.g., what kind of shirt was worn). It also requires people to be accurate in a way that is not necessary (or even noticed) for many other memory tasks. People have lots of memories, but they have to sort out which ones are actually relevant to the particular moment in time that matters. For example, a person might have seen someone else on a train on many different days, and may have memories about what they wore for those different days. When asked about what was worn on any particular day, they may report memories that are actually from the wrong day.

Like many memory tasks, eye-witness testimony is constructive. This means that people do not just report a “recording” of an event. Instead, people use all kinds of information (including the absence of information) as the basis for their reported memory. For example, a person wearing shorts in January would be memorable, so if you do not have such a memory, then you can be pretty confident that a person you are asked to remember was not wearing shorts. In a similar way you often combine lots of information (sometimes through logic, probability, or inference) to form a memory.

[There are several good ways to answer this question. Other answers might discuss the Loftus & Palmer misinformation effect or flashbulb memories.]
(B) Describe the amnesia characteristics of patient HM. In what kind of situations was he able to demonstrate some form of memory?

Patient HM suffered from anterograde amnesia, which means he was unable to learn new information. Every day he woke up believing that it was a few day before his operation (which caused his amnesia). He had fairly normal short-term memory, so he could carry a conversation, but if a person left the room and then came back, HM would not remember that person’s name or that he had every met him. Thus, his problems were with long term memory.

However, HM did seem to be able to learn some things in long-term memory. For example, he improved with practice on a mirror drawing task; so that after two days of practice, he hardly made any errors. Notably, HM did not remember that he had every practiced the mirror drawing task, so he was rather surprised to discover that he was a “natural” at the task on the third day. (People could also describe HM’s ability to find the cafeteria in his hospital.)

(C) Briefly describe the experiment about the role of recall practice on memory. What study advice follows from this experiment?

When using flash cards to study (e.g., to learn English translations of foreign words), it is common to sometimes study (look at the foreign word and look at the translation) and to sometimes test (look at the foreign word and try to generate the English translation). An experiment investigated memory according to what people did after successfully passing the test. To pass such a test, one must have the association between the words in memory, so it might seem that you should stop studying or testing that word pair, and instead focus on other words. In the experiment, subjects were split into 4 groups that varied in how they interacted with the words after a successful recall (pass a test):

1) Keep studying, but do not practice test.
2) Keep studying, and keep practice testing.
3) Stop studying, and stop practice testing.
4) Stop studying, but keep practice testing.

A week later, subjects are brought back to the lab for a final test. Subjects who continued to practice test did much better (regardless of whether or not they continued to study) than subjects who did not.

Thus, you can improve memory for an item by testing yourself, and keep testing yourself even after you seem to have learned the material. This approach improves your ability to recall the information from memory.
(D) Describe the CogLab version of the mental rotation experiment, the typical results, and the interpretation of the results.

Each trial shows a pair of block shapes. The shapes are either different or the same, with one shape rotated (in depth) relative to the other shape. The task is to determine, as quickly as possible, whether the shapes are the same or different. Across trials, the amount of rotation is systematically varied.

The results are that the time to respond increases with the rotation angle of the shapes.

The interpretation is that subjects are doing a kind of mental rotation of one shape to line it up with the other shape. This mental rotation seems to have to cover the locations in between the positions of the presented shapes. It takes more time to cover a larger angle, which is why the response time increases with rotation angle.

These results suggest that the way people think about mental images is rather similar to perceptual experience, because the manipulation of mental images (e.g., rotation) follows the rules of real images (e.g., you cannot teleport a shape from one position to another). It is difficult to imagine how propositions would have this kind of characteristic, so it suggests that mental images have some perceptual properties.

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The following multiple choice questions are worth 2 points each. Enter your answer on the scantron sheet. Enter only one choice for each question.

(1) Generally (but not in the classroom demonstration), recall is better when subjects are asked to remember a _________ list of items than a _________ list of items:
   (a) whole, partial.
   (b) retroactive, proactive.
   (c) shallowly processed, deeply processed.
   (d) retrograde, anterograde.

(2) Which of the following would be an example of the encoding specificity principle?:
   (a) deep processing is better than shallow processing.
   (b) flashbulb memories are very vivid.
   (c) students do better on an exam when they attend lectures.
   (d) memory is constructive.

(3) Encoding specificity suggests that forgetting might be a retrieval problem because:
   (a) shallow processing is not strong enough.
   (b) people can have “false memories.”
   (c) information that was forgotten might be recalled in a different context.
   (d) memories are cognitive events.
(4) Encoding specificity suggests that “hints” do not always help to jog memory because:
(a) the hint is at the wrong level of processing.
(b) of retroactive interference.
(c) the hint masks the true memory.
(d) the hint changes the context of recall.

(5) Memory performance tends to get worse across repeated trials. This is an example of:
(a) shallow processing.
(b) practice.
(c) proactive interference.
(d) retroactive interference.

(6) In the phonological loop, the counting backwards task in the Brown-Peterson experiment
is an example of:
(a) shallow processing.
(b) practice.
(c) proactive interference.
(d) retroactive interference.

(7) An explanation for the “false memory” effect, as experienced in CogLab is that people
have:
(a) a change in context that makes them forget most items.
(b) proactive interference.
(c) memories of thoughts about the special lure that are mistaken to be from seeing the
item.
(d) a primacy effect.

(8) Which of the following is a characteristic of a flashbulb memory?:
(a) it does not fade over time.
(b) people are convinced it is very accurate.
(c) it only captures information about the “event,” not other information.
(d) it is never forgotten.

(9) Which of the following is a characteristic of a flashbulb memory?:
(a) it feels very vivid compared to normal memories.
(b) it automatically produces deep processing.
(c) it is a kind of retrograde amnesia.
(d) it is an example of encoding specificity.

(10) Penfield (1959) found that when stimulating certain areas of the brain, patients:
(a) re-experienced a memory of their past.
(b) experienced memories from a past life.
(c) forgot what they were going to say.
(d) reported having a vivid memory that they had forgotten.

(11) A risk for patients undergoing role-playing in therapy is that the therapist might accidentally:
(a) trigger suppressed memories.
(b) cause retrograde amnesia.
(c) “implant” a false memory.
(d) access long term memory.
(12) If after an accident you cannot remember things that you learned before the accident, then you have:
   (a) proactive interference.
   (b) retroactive interference.
   (c) anterograde amnesia.
   (d) retrograde amnesia.

(13) If after an accident you cannot remember things that happened after the accident, then you have:
   (a) proactive interference.
   (b) retroactive interference.
   (c) anterograde amnesia.
   (d) retrograde amnesia.

(14) Which of the following memories would be an example of information in the nondeclarative (implicit) memory system of LTM?
   (a) knowing the name of the instructor of this class.
   (b) knowing when you learned the name of the instructor of this class.
   (c) recognizing the instructor’s face.
   (d) knowing how to tie a shoelace.

(15) Most people do not have memories of things that happened to them when they were younger than 4 years old. This is called:
   (a) infantile amnesia.
   (b) infantile suppression.
   (c) release from pre-language learning.
   (d) iconic memory.

(16) Memory researchers are skeptical that memory “repression” is a real thing because it is difficult to:
   (a) show that a patient could not remember something.
   (b) show that treatment recovered a repressed memory.
   (c) verify that the recovered memory was “real.”
   (d) all of the above.

(17) In the levels of processing effect, the best memory occurs:
   (a) for deep processing.
   (b) for shallow processing.
   (c) when the level of processing is similar at the time of test as at the time of study.
   (d) when processing reduces the build up of proactive interference.

(18) Our final exam is not in the same room as the lecture, the properties of encoding specificity suggest that you should:
   (a) not attend lectures.
   (b) study only in your dorm room or apartment.
   (c) study in diverse environments.
   (d) use methods that promote auditory learning rather than visual learning.
(19) Which of the following is a valid statement about learning styles?
   (a) instructors should adjust their teaching method to a student’s learning style.
   (b) students do not actually have preferred learning styles.
   (c) all methods work equally well for all learning styles.
   (d) there seems to be no reason to adjust the teaching method to a student’s preferred learning style.

(20) SF increased his memory span to 81 digits. He did this largely by:
   (a) increasing his rehearsal rate in the phonological loop.
   (b) increasing the capacity of his phonological store.
   (c) increasing the capacity of his long term memory.
   (d) using his long term memory.

(21) In the “method of loci” technique for memorization, you recall items by:
   (a) repeating a mental walk and using visualized bizarre imagery to remind you of the items.
   (b) repeating a poem and using visualized bizarre imagery to remind you of the items.
   (c) thinking back to the context of study.
   (d) counting backwards and using the numbers to jog your memory.

(22) The current conclusion from “brain training” techniques is that they:
   (a) effectively exercise your brain.
   (b) give children a “head-start” in school.
   (c) generalize to other tasks (e.g., fluid intelligence).
   (d) do not generalize to other tasks (e.g., fluid intelligence).

(23) Sleep seems to be important for:
   (a) recalling explicit memories.
   (b) recalling implicit memories.
   (c) recalling memories in a way that enables comparisons.
   (d) using the method of loci.

(24) The main problem with the definition approach to concepts is that:
   (a) it never works.
   (b) different people use different definitions.
   (c) it does not reflect how people seem to actually think.
   (d) definitions cannot exist for *ad hoc* concepts.

(25) In the exemplar theory of concepts, a concept is:
   (a) the result of processing all remembered examples of a concept.
   (b) a single memory.
   (c) ambiguous definitions.
   (d) an average of different examples.

(26) A proposition is:
   (a) the simplest possible concept.
   (b) the simplest statement that can be judged as true or false.
   (c) a unification of prototype and exemplar theories.
   (d) a prototype.
Ratcliff & McKoon (1978) found evidence that subjects:
(a) use exemplar theory.
(b) do not use propositions.
(c) use propositions
(d) represent concepts with prototypes.

A problem with the prototype theory of concepts is that:
(a) different people have different prototypes.
(b) some prototypes are images.
(c) some concepts seem to be generated “on the spot.”
(d) prototypes cannot be part of propositions.

Trying to rotate a mental image and then reinterpret it is difficult, which suggests that mental images:
(a) are almost identical to real images.
(b) definitely have a perceptual aspect.
(c) almost surely include propositional information.
(d) are represented in the occipital lobe of the brain.

Mental images would most likely utilize which part of working memory?:
(a) echoic memory.
(b) phonological store.
(c) recency effect.
(d) visuospatial sketchpad.