Introduction to Psychology
Learning and Memory Quiz – Answer Key

1. **(C) Neutral stimulus.** Before conditioning, the bell did not elicit salivation. Only after repeated pairing with food (unconditioned stimulus) did it become a conditioned stimulus.

2. **(B) Variable ratio.** Variable ratio schedules (reinforcement after an unpredictable number of responses) produce high, steady response rates and are resistant to extinction. This is why gambling is so addictive.

3. **(A) Items at the beginning and end of a list better than middle items.** This comprises the primacy effect (better recall of early items) and recency effect (better recall of recent items).

4. **(B) Short-term memory.** George Miller's famous paper established that short-term memory holds approximately 7 ± 2 chunks of information.

5. **(B) Loss of memories formed before the trauma.** Retrograde amnesia affects past memories, while anterograde amnesia (option A) affects formation of new memories.

6. **False.** Negative reinforcement increases behavior by removing an unpleasant stimulus. Punishment decreases behavior by applying an unpleasant stimulus or removing a pleasant one.

7. **True.** The hippocampus is critical for consolidating declarative (explicit) memories—facts and events. Damage to the hippocampus impairs new memory formation, as demonstrated in patient H.M.

8. **False.** Research by Loftus and others demonstrates that memory is reconstructive and susceptible to suggestion, misinformation, and false memories. Eyewitness testimony is often unreliable.

9. **Classical Conditioning (Pavlov):**

   - Learning through association between stimuli
   - Involves involuntary, reflexive responses
   - Key concepts: unconditioned stimulus/response, conditioned stimulus/response, extinction, generalization
   - Applications: advertising (pairing products with positive emotions), treating phobias (systematic desensitization)

   Operant Conditioning (Skinner):

   - Learning through consequences of voluntary behavior
   - Involves reinforcement (increases behavior) and punishment (decreases behavior)
   - Key concepts: positive/negative reinforcement, positive/negative punishment, shaping, schedules of reinforcement
   - Applications: classroom management, animal training, behavioral therapy, workplace incentives

Key differences: Classical involves passive learning of associations; operant involves active behavior modified by consequences. Classical deals with reflexive responses; operant with voluntary behaviors.

10. The Model: Atkinson and Shiffrin (1968) proposed three distinct memory stores: (1) Sensory memory—brief storage of sensory information (iconic, echoic); (2) Short-term memory—limited capacity (7±2 items), short duration (15-30 seconds without rehearsal); (3) Long-term memory—unlimited capacity, potentially permanent storage.

Strengths: Influential framework; supported by case studies (H.M. showed intact STM but impaired LTM formation); primacy/recency effects support distinction between stores; neuroimaging shows different brain regions involved.

Criticisms:

(1) *Oversimplification of STM:* Baddeley's Working Memory Model proposes multiple components (phonological loop, visuospatial sketchpad, central executive, episodic buffer) rather than a unitary STM.

(2) *LTM not unitary:* Evidence distinguishes declarative (explicit: semantic, episodic) and procedural (implicit) memory, with different neural substrates.

(3) *Rehearsal not necessary:* Flashbulb memories and incidental learning show information can enter LTM without deliberate rehearsal.