Exam 1

Your score on this exam will count toward 10% of your final grade. Each question is worth 2 points. Enter your answer on the scantron sheet. Enter only one choice for each question. There is no need to put your name on this exam, but do hand it in with your scantron sheet.

(1) For visual perception, *contralateral processing* means that the right hemisphere receives information from the:
   (a) left eye.
   (b) right eye.
   (c) left field of view.
   (d) right field of view.

(2) The cerebellum is part of the:
   (a) hind-brain.
   (b) fore-brain.
   (c) cortex.
   (d) thalamus.

(3) The mass of neural fibers connecting the two hemispheres of the brain is called the:
   (a) hypothalamus.
   (b) sulci.
   (c) corpus callosum.
   (d) axon.

(4) A split brain patient is blind folded and holds a small object in their left hand. When asked to identify the object by touch, a typical patient might:
   (a) report what was in their right hand.
   (b) not understand the question.
   (c) say, “I don’t know.”
   (d) subvocalize to get the information from the left hemisphere to the right hemisphere.

(5) The CogLab brain asymmetry experiment did not show hemispheric differences. This is probably because:
   (a) left handed people tend to not have as many hemispheric differences as right handed people.
   (b) students in the class have a functioning corpus callosum.
   (c) language ability does not differ across hemispheres.
   (d) memory ability does not differ across hemispheres.
(6) If someone tells you that Broadman’s area 44 seems to be involved in suppressing responses, you know that they are talking about:
   (a) a place in the brain.
       (b) a certain type of neuron.
       (c) the brain region that is 4 steps in from the left and 4 steps down from the top.
       (d) something that is true for 44% of people.

(7) In the primary sensory area,:  
   (a) nearby regions of the body correspond to nearby regions in the brain.
   (b) larger regions of the body correspond to more area in the brain.
   (c) information is represented “inside-out.”
   (d) speed of processing is related to how much of the brain is assigned to a body part.

(8) Which of the following is typically associated with the brain’s right hemisphere?
   (a) rationality.
       (b) language.
       (c) music.
       (d) none of the above.

(9) An fMRI scan measures:
   (a) local blood concentration of oxygen.
       (b) electrical signals on the scalp.
       (c) radioactive glucose in the blood stream.
       (d) differences in brain activity.

(10) If you want to measure how the brain processes a single word in a sentence, the brain scanning method with the best temporal resolution is:
    (a) BOLD.
        (b) EEG.
        (c) fMRI.
        (d) MRI.

(11) The BOLD signal measured by fMRI is an acronym for:
     (a) Brain Order Length Dimension.
         (b) Bilateral Osmosis Liat Design.
         (c) Blood Oxygen Level Dependent.
         (d) Broadman Outer List Depth.

(12) The main difference between MRI and fMRI is that:
     (a) MRI has better temporal resolution.
         (b) fMRI detects differences between active and inactive neurons.
         (c) MRI tracks myelin.
         (d) fMRI can only scan one “slice” at a time.

(13) The colors shown for a fMRI scan result corresponds to brain areas that:
     (a) were active while doing the task.
         (b) sent excitatory signals while doing the task.
         (c) sent inhibitory signals while doing the task.
         (d) responded differently while doing the task compared to some control task.
(14) A recent fMRI study concluded that, “food commercials stimulate children’s brains in a way that nonfood commercials do not.” A problem with this conclusion is that:
(a) there cannot be a control condition.
(b) fMRI is too slow to measures these differences.
(c) we already knew the brain responded differently to different commercials.
(d) the result could be explained by the flickering TV.

(15) The difference map of a brain scan identifies:
(a) areas of the brain that are strong in both the control and experimental conditions.
(b) brain areas that are strong in either the control or the experimental conditions.
(c) changes in the strength of activation for brain areas in the control and experimental conditions.
(d) change in excitatory and inhibitory signals of brain areas in the control and experimental conditions.

(16) A limitation of the fMRI mind reading study is that:
(a) the classification algorithm was only 72% accurate.
(b) the classification algorithm does not work if the participant does something other than add or subtract the numbers.
(c) there was no control condition.
(d) it measured anatomy, not activity.

(17) The fMRI study of the tongue display unit suggests that the information it provides from a camera is:
(a) in the brain areas related to receiving signals on the tongue.
(b) in the brain areas related to processing visual information.
(c) both (a) and (b).
(d) none of the above.

(18) The fMRI study of social exclusion for a dead salmon highlights:
(a) the importance of a control scan.
(b) the need for difference maps.
(c) that salmon have emotions.
(d) statistical difficulties with false positives.

(19) Which part of a neuron “reads in” signals from other neurons?:
(a) axon.
(b) dendrite
(c) myelin sheath.
(d) soma.

(20) Which part of a neuron is attacked in multiple sclerosis?:
(a) axon.
(b) dendrite
(c) myelin sheath.
(d) soma.
(21) The resting -70 mV electrical potential in a neuron, relative to its surround, is the result of:
   (a) more positively charged potassium inside than outside the cell.
   (b) more positively charged sodium outside than inside the cell.
   (c) both (a) and (b).
   (d) the rush of sodium into the cell.

(22) The rising electrical potential of an action potential is due to the:
   (a) rush of sodium into the neuron.
   (b) rush of potassium out of the neuron.
   (c) rush of neurotransmitter into the neuron.
   (d) inhibitory signals.

(23) The drop in electrical potential of an action potential after its peak is mostly due to the:
   (a) rush of sodium into the neuron.
   (b) rush of potassium out of the neuron.
   (c) rush of neurotransmitter into the neuron.
   (d) inhibitory signals.

(24) When a neuron sends a signal to another neuron, the receiving neuron is:
   (a) more likely to have an action potential.
   (b) less likely to have an action potential.
   (c) both (a) and (b).
   (d) either (a) or (b) depending on the synapse.

(25) In the science fiction movie *Lucy* a woman took a drug that made her use nearly 100% of her brain. In the movie she became superhuman, in reality such a person would:
   (a) be smart, but not superhuman.
   (b) think faster, but not better.
   (c) become epileptic.
   (d) run out of neurotransmitter.

(26) When an action potential arrives at the end of an axon it causes:
   (a) the release of neurotransmitter into the synaptic cleft.
   (b) proteins on the receiving neuron to twist shape.
   (c) neurotransmitter to be recycled into the neuron.
   (d) an electrical short-circuit that causes another neuron to have an action potential.

(27) At the neurotransmitter level, Tourette’s syndrome seems to be related to:
   (a) too much serotonin.
   (b) too much dopamine.
   (c) too many serotonin receptors.
   (d) too many dopamine receptors.

(28) L-DOPA is a treatment for Parkinson’s disease because it:
   (a) resembles dopamine.
   (b) blocks dopamine.
   (c) enables the brain to produce dopamine.
   (d) enhances the dopamine receptors.
(29) At the neurotransmitter level, Prozac treats some forms of depression by:
   (a) acting like serotonin.
   (b) increasing the production of serotonin.
   (c) making the existing serotonin more effective.
   (d) blocking serotonin.

(30) Morphine is an effective pain killer because it:
   (a) is similar in shape to neurotransmitters related to pain control.
   (b) blocks neurotransmitters that correspond to pain.
   (c) reduces the sensitivity of the pain receptors.
   (d) puts the patient to sleep.

(31) The definition of a receptive field is:
   (a) the pattern of inputs that make a neuron respond.
   (b) the set of stimuli that excite a neuron.
   (c) the set of stimuli that inhibit a neuron.
   (d) the set of stimuli that change a neuron’s firing rate.

(32) The physiological basis of the blind spot is:
   (a) the off-surround part of a receptive field.
   (b) the place on the back of the eye were nerves and blood vessels enter and leave the eye.
   (c) the bridge of the nose prevents light from reaching some parts of the eye.
   (d) inhibition.

(33) A neuron with a center-surround receptive field responds best to:
   (a) a spot of light that fills just the center part of the receptive field.
   (b) a spot of light that fills the entire receptive field.
   (c) a bar of light at the appropriate orientation.
   (d) any bar of light.

(34) A complex cell responds best to:
   (a) a small spot of light.
   (b) a bar of light with an appropriate orientation.
   (c) a bar of light with an appropriate orientation and single location.
   (d) a bar of light with an appropriate orientation at a small range of locations.

(35) If you have many neurons with similar receptive fields that are centered on different positions, which ones will respond somewhat (perhaps not best) to a horizontal luminance edge?:
   (a) center-surround receptive field.
   (b) horizontally aligned simple receptive field.
   (c) horizontally aligned complex receptive field.
   (d) all of the above.

(36) We argued against the idea that action potentials from a single cell might correspond to seeing your grandmother because:
   (a) receptive fields cannot be so precise.
   (b) it would require both excitation and inhibition.
   (c) you would not have enough neurons in your brain for all of your percepts.
   (d) your grandmother is not a neuron.
(37) The *resonance hypothesis* is that:
(a) receptive fields involve both excitation and inhibition.
(b) a cognitive experience corresponds to a stable pattern of brain activity.
(c) neurons are part of a network.
(d) networks can tolerate the loss of some cells.

(38) The term *connection weight* in a model neural network corresponds most closely to:
(a) axon.
(b) dendrite.
(c) soma.
(d) synapse.

(39) The term *activation* in a model neural network corresponds most closely to:
(a) firing rate.
(b) an action potential.
(c) the BOLD signal.
(d) settling down.

(40) The property of a neural network to create illusory contours is most similar to the more general property of:
(a) settling down to a stable pattern.
(b) error correction capabilities.
(c) tolerating the loss of some cells.
(d) updating cell activities.

(41) If a neural network originally represented the word *NEAT* but then the *T* cell died, it would still converge to *NEA*. This is an example of:
(a) error correction capabilities.
(b) synaptic recalibration.
(c) tolerating the loss of some cells.
(d) Hebbian learning.

(42) Learning in a neural network corresponds to:
(a) changing connection weights.
(b) changing the firing rate.
(c) producing an illusory contour.
(d) storing a pattern of activity.

(43) In Hebb’s rule for learning, two neurons that fire at the same time tend to form:
(a) an excitatory connection.
(b) an inhibitory connection.
(c) a resonant state.
(d) a dendrite.

(44) A neural network that learns with Hebbian learning has something like memory. The *storage* of the memory is in what part of the network?:
(a) activities.
(b) excitatory and inhibitory weights.
(c) changes to the update rule.
(d) resonance.
(45) A neural network that learns with Hebbian learning has something like memory. The recall of the memory is most similar to what network characteristic?:
(a) error correction capabilities.
(b) synaptic recalibration.
(c) tolerating the loss of some cells.
(d) activity update.

(46) Suppose a neural network similar to what we demonstrated in class starts with zero weights for all connections. It is presented with the pattern NEAT and then with the pattern PEAR. Hebbian learning is applied during each pattern presentation. Which pair of cells will have the strongest excitatory connections?:
(a) PE.
(b) EA.
(c) NT.
(d) AR.

(47) Surgeons using virtual reality may suffer from perceptual/motor distortions. This is largely because:
(a) neural networks settle down to a stable pattern.
(b) they lose neurons during the surgery.
(c) Hebbian learning changes their eye-hand coordination.
(d) of the error correction capabilities of their neural networks.

(48) Curare is a poison because it:
(a) mimics endorphin peptides.
(b) replaces dopamine.
(c) prevents production of serotonin.
(d) blocks acetylcholine.

(49) Which lobe of cortex is most involved in visual perception?:
(a) frontal.
(b) occipital.
(c) parietal.
(d) temporal.

(50) What brain activity generates the electrical signals measured by an EEG scan?:
(a) action potential.
(b) BOLD signal.
(c) connection weight.
(d) neurotransmitter-receptor pair.
Introduction to Cognitive Psychology: PSY 200

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Exam 2

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(1) In the brightness contrast illusion, a gray square on a black background produces the strongest response for an on-center, off-surround cell that is:
   (a) entirely inside the gray square.
   (b) entirely on the black background.
   (c) at an edge with the on-center entirely in the gray square.
   (d) at an edge with the on-center entirely in the black background.

(2) The intersections of the (white lines on a black background) Hermann grid illusion appear a fuzzy gray because the center-surround cells at those locations receive:
   (a) twice as much inhibition as cells at a single street.
   (b) half as much inhibition as cells at a single street.
   (c) twice as much excitation as cells at a single street.
   (d) half as much excitation as cells at a single street.

(3) Which of the following pairs do not correspond to a color-competition gated dipole circuit?:
   (a) red–green.
   (b) blue–yellow.
   (c) brown–purple.
   (d) black–white.

(4) The gated dipole responsible for oriented afterimages has competitive channels tuned to:
   (a) opposite colors.
   (b) orthogonal orientations.
   (c) 180 degree orientations.
   (d) center and surround orientations.

(5) Which illusion does not strongly depend on “filling-in”?:
   (a) Hermann grid illusion.
   (b) water color effect.
   (c) Craik-O’Brien-Cornsweet effect.
   (d) disappearing pink circle.
(6) In the brightness contrast illusion, a gray square on a black background appears ___ the same gray square on a white background:
(a) darker than.
(b) lighter than.
(c) the same as.
(d) more colorful than.

(7) The oriented afterimage produced after looking at a set of concentric circles (see image) would be:
(a) oriented circles.
(b) upward movement.
(c) outward radiating lines.
(d) horizontal lines.

(8) If a light switches on and off very quickly, it appears to always be on. The slowest rate of turning on and off that produces this percept is called the:
(a) minimal persistence rate.
(b) critical flicker frequency.
(c) shortest afterimage duration.
(d) fastest refresh experience.

(9) In the Bowen, Pola & Matin (1973) experiment on visual persistence, increasing the duration of the target stimulus produced:
(a) longer visual persistence.
(b) shorter visual persistence.
(c) faster reaction times.
(d) a motion aftereffect.

(10) The neural network explanation of the properties of visual persistence suggest that persistence is primarily due to:
(a) oriented afterimages.
(b) color afterimages.
(c) excitatory feedback.
(d) masking.

(11) A Reichardt detector is sensitive to:
(a) a moving stimulus at the correct location.
(b) a moving stimulus in the correct direction.
(c) a moving stimulus at the correct speed.
(d) the combination of (a), (b), and (c).

(12) Apparent motion is:
(a) just like real motion.
(b) not detected by neural receptive fields.
(c) the motion produced in movies and television.
(d) slower than real motion.
(13) If you kept your eyes still while watching a train move in front of you from left to right, you would likely experience an aftereffect of:
(a) lines moving upward.
(b) motion from right to left.
(c) apparent motion.
(d) your body being dragged to the right.

(14) Korte’s laws of apparent motion relate what two stimulus variables?:
(a) speed and size.
(b) interstimulus interval and spacing.
(c) intensity and color.
(d) texture and orientation.

(15) Our cognitive systems are unable to deal with all the information available in the environment around us. This limitation leads to selective processing of only some information; this selective processing is commonly called:
(a) attention.
(b) borrowing.
(c) capacity.
(d) development.

(16) In the “magic trick” demonstration presented in class, it at first seemed that I made your selected card disappear. The trick works because:
(a) you did not process unselected cards.
(b) you saw, but did not attend, to unselected cards.
(c) everyone selects the same card.
(d) you partially processed the unselected cards.

(17) An image is shown and then replaced with a modified image (e.g., with one item removed). It is easy to detect the change in the images because:
(a) the changed location is not processed.
(b) some neurons respond to the changed parts of the images.
(c) you do not need attention to detect a changed image.
(d) of automaticity.

(18) In contrast to the situation in question (17), if a blank gray frame is between the two images, then:
(a) the changed location is quickly processed.
(b) neurons for detecting change respond everywhere.
(c) it often takes a long time to detect the change.
(d) both (b) and (c).

(19) The attentional paradox is that attention:
(a) increases neural responses without (usually) changing the perceptual experience.
(b) is about information processing.
(c) does not exist in neural circuits.
(d) cannot be studied with fMRI.
(20) The key behavioral measure in the CogLab attentional blink experiment is the:
(a) reaction time needed to detect a letter.
(b) number of letters recognized.
(c) persistence of a letter.
(d) proportion of detections of the second of two target letters.

(21) A processing resources explanation of the attentional blink effect is that the blink occurs because:
(a) the eyes close to better process the first letter.
(b) letters blur together when presented too quickly.
(c) processing of one letter uses resources that would otherwise help detecting the second letter.
(d) the afterimage of the first letter masks the second letter.

(22) In a feature-based visual search task, increasing the number of distractors causes:
(a) reaction time to decrease.
(b) reaction time to increase.
(c) no effect on reaction time.
(d) accuracy to decrease.

(23) In the CogLab visual search experiment, which condition would produce the \textit{fastest} reaction time:
(a) conjunctive search, target absent, 16 distractors.
(b) conjunctive search, target present, 16 distractors.
(c) conjunctive search, target present, 32 distractors.
(d) feature search, target present, 64 distractors.

(24) In the feature map explanation of visual search, search is fast when:
(a) the target signal is strengthened by the distractors.
(b) more energy is in the distractor map.
(c) the target map is empty.
(d) the target signal is in a separate map than the distractor signals.

(25) In a conjunctive visual search that varies the number of distractors, the slope for a target absent condition is often twice that of a target present condition. This is because:
(a) the target is isolated in a feature map.
(b) people generally find the target after searching half the items.
(c) people double-check for the target absent condition.
(d) the target absent condition occurs only half the time.

(26) Some well-learned tasks seem to require no attention; this is called:
(a) anti-attention.
(b) featural processing.
(c) automaticity.
(d) excitatory feedback.
(27) The basic explanation for the Stroop effect is that:
(a) word reading is automatic.
(b) color naming is automatic.
(c) we cannot read words backwards.
(d) short term memory involves speech sounds.

(28) The partial report method suggests a bigger capacity of iconic memory than the whole report method. This is mainly because the:
(a) whole report method introduces masking.
(b) partial report method uses persistence.
(c) partial report method allows you to attend to fading stimulus information.
(d) whole report method requires guessing.

(29) The partial report experiment that was modified to work with infants discovered that:
(a) iconic memory lasts longer than echoic memory.
(b) children do not have iconic memory.
(c) the capacity of iconic memory is smaller for infants than for adults.
(d) children and adults have similar iconic memory systems.

(30) Which of the following is not part of an immediate serial recall experiment:
(a) items must be reported directly after the end of the list.
(b) items must be reported in the order they were given.
(c) items can be reported in any order.
(d) items must be remembered without any direct cues.

(31) Performance on the partial report task is quite bad when the matrix is followed by a set of X’s. This is because the X’s:
(a) inhibit the persisting information about the matrix in iconic memory.
(b) are read automatically and overwrite information in the phonological loop.
(c) enter echoic memory and confuse the participant.
(d) increase persistence of the original stimuli.

(32) Which memory system has the smallest capacity?:
(a) iconic memory.
(b) echoic memory.
(c) short term memory.
(d) long term memory.

(33) In an immediate serial recall task with auditory presentation, echoic memory is likely to lead to good performance for:
(a) items at the beginning of the list (primacy).
(b) items at the end of the list (recency).
(c) items in the middle of the list.
(d) all items equally.

(34) An explanation of the suffix effect is that the suffix:
(a) helps move items from short term memory to long term memory.
(b) increases the duration of items in iconic memory.
(c) masks items in echoic memory.
(d) is like articulatory suppression.
(35) Telephone operators tend to not say, “goodbye” after giving you a requested phone number. Rather than being rude, they are actually helping you:
(a) use information in echoic memory.
(b) enhance the suffix effect.
(c) avoid the modality effect.
(d) avoid phonological similarity effects.

(36) The measure of memory in Ebbinghaus’ experiment was:
(a) proportion correct.
(b) time needed to learn a list.
(c) savings.
(d) self-judged ratings of memorability.

(37) The Brown-Peterson experiment tells us something about the:
(a) capacity of short term memory.
(b) duration of short term memory.
(c) capacity of long term memory.
(d) duration of long term memory.

(38) Miller’s memory span experiment tells us something about the:
(a) capacity of short term memory.
(b) duration of short term memory.
(c) capacity of long term memory.
(d) duration of long term memory.

(39) It is difficult to win a pizza at Little Ceasers because beating the contest machine requires:
(a) requires remembering both lights and sounds.
(b) using both iconic and echoic memory.
(c) overcoming the suffix effect.
(d) remembering much more than 7 items.

(40) Which hypothetical search process for short term memory would predict no change in search time as a function of memory set size?:
(a) parallel.
(b) automatic
(c) serial self-terminating.
(d) serial exhaustive.

(41) The conclusion of Sternberg’s experiment on the search of short term memory was that the search process was:
(a) parallel.
(b) automatic
(c) serial self-terminating.
(d) serial exhaustive.
(42) The findings from Sternberg’s experiment on the search of short term memory suggests which component of *working memory*?:
(a) central executive.
(b) visuo-spatial sketchpad.
(c) phonological loop.
(d) long term memory.

(43) The working memory interpretation of Brooks’ study is that when the task and response style are similar, participants:
(a) quickly complete the task because everything is within one system.
(b) slow down because they have to coordinate two different systems.
(c) quickly complete the task because they use two different systems.
(d) slow down because one system has to do everything.

(44) The key difference between the concept of *short term memory* and *working memory* is:
(a) capacity.
(b) duration.
(c) modality.
(d) processes.

(45) Information in the phonological loop is encoded as a representation of:
(a) pictures.
(b) words.
(c) speech sounds.
(d) savings.

(46) Which part of the phonological loop holds information for a bit less than 2 seconds?:
(a) articulatory control process.
(b) central executive.
(c) phonological store.
(d) visuo-spatial sketchpad.

(47) People generally have a shorter memory span for long words than for short words. The phonological loop suggests that this effect is because:
(a) long words disappear faster from the central executive.
(b) short words are rehearsed/refreshed faster than long words.
(c) short words are more easily converted to speech sounds.
(d) long words take more time to fade from the phonological store.

(48) The phonological similarity effect suggests that (for English speakers) the sequence:
(a) *g, h, k, w, t, s* is easier to remember than *g, b, d, z, t, p*.
(b) *fat, short, hand, car* is easier to remember than *bicycle, trampoline, newspaper, phantom*.
(c) both (a) and (b).
(d) neither (a) nor (b).
(49) The properties of the phonological loop suggest that if you need some noise while studying, you should listen to:
(a) a boring TV show.
(b) a TV show how you have previously seen.
(c) an opera.
(d) a fan.

(50) Articulatory suppression hurts short term memory because it:
(a) speeds up rehearsal, thereby preventing transfer to long-term memory.
(b) interferes with items in the phonological store.
(c) confuses the central executive.
(d) makes it harder to rehearse items.
Exam 3

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(1) The key conclusion of the part-set cuing effect is that memory performance:
   (a) is context-dependent.
   (b) is better for similar contexts.
   (c) gets worse with more trials.
   (d) cannot be trusted without object physical evidence.

(2) Memory recall tends to be best when a person is tested in a similar context as when learning occurred. This is called:
   (a) part-set cuing.
   (b) false memory.
   (c) encoding specificity.
   (d) retroactive interference.

(3) According to the encoding specificity principle, which combination of conditions will produce the best recall?:
   (a) study words with cues, test words without cues.
   (b) study words without cues, test words without cues.
   (c) study words without cues, test words with cues.
   (d) study words with one set of cues, test words with a different set of cues.

(4) Encoding specificity makes it difficult to determine whether something is permanently forgotten because:
   (a) forgetting is not about information “fading away.”
   (b) of retroactive interference.
   (c) it might be remembered in a context that better matched the learning context.
   (d) some information is easier to remember than other information.

(5) Our final exam will be held in the same room as the lecture, this might:
   (a) help you recall information from the lecture because it is a similar context.
   (b) prevent you from recalling information from the lecture because it is a similar context.
   (c) help you recall information from the lecture because it produces retroactive inference.
   (d) prevent you from recalling information from the lecture it produces retroactive inference.
(6) In the CogLab False memory experiment, the participant’s task was:
(a) an immediate serial recall task.
(b) to respond as quickly as possible whether a word was previously seen.
(c) to respond as accurately as possible whether a word was previously seen.
(d) to guess the “special” lure that was related to the shown words.

(7) The false memory experiment demonstrates that:
(a) memory accuracy is influenced by context.
(b) memory confidence is influenced by context.
(c) you can recognize items you have seen before but cannot recognize items you have not previously seen.
(d) you can have a memory for a word that you did not see.

(8) In the serial position experiment, memory tends to get worse as the experiment proceeds, this effect is called:
(a) active interference.
(b) proactive interference.
(c) retroactive interference.
(d) Wallach interference.

(9) After getting a mobile phone, I no longer remember the phone number for my (now canceled) landline phone. This is an example of:
(a) echoic memory.
(b) retroactive interference.
(c) false memory.
(d) part-set cuing.

(10) Release from proactive interference tends to happen when the item on the last trial is:
(a) similar to the previous trials.
(b) different from the previous trials.
(c) stored in long term memory.
(d) stored in short term memory.

(11) The phonological loop uses a(n) ______ kind of interference to explain the effect of articulatory suppression:
(a) temporary.
(b) erratic.
(c) storage.
(d) retrieval.

(12) The experiment using indoor versus outdoor sports suggests that proactive interference operates at:
(a) short term memory.
(b) memory storage.
(c) memory retrieval.
(d) long term memory.
(13) A problem with interpreting Penfield’s (1959) study of memory as evidence of suppression is that:
(a) many reported memories could not be verified.
(b) some reported memories seemed to be false.
(c) epileptic patients might be different from non-patients.
(d) all of these.

(14) Which of the following best describes the experience of a flashbulb memory?:
(a) really good memory of a traumatic event.
(b) really good memory of a traumatic event and the personal context of the event.
(c) really good memory of a traumatic event and poor memory of other events at the same time.
(d) really good memory of a traumatic event and poor memory of the personal context of the event.

(15) Studies of flashbulb memories suggest that a flashbulb memory is actually:
(a) better than a regular memory.
(b) worse than a regular memory.
(c) more vivid than a regular memory.
(d) less vivid than a regular memory.

(16) In the misinformation study of Loftus & Palmer (1974), a misleading question seemed to:
(a) buffer memories of slides so that they lasted longer.
(b) produce proactive interference.
(c) confuse subjects.
(d) change the memories of slides to reflect the question.

(17) The misinformation effect seems to:
(a) get stronger with a longer delay before testing.
(b) gradually fade as the original memory returns.
(c) produce uncertainty about memory confidence.
(d) be weak if subjects are paid to make correct reports about what they saw.

(18) When can you be certain that a memory is valid/correct?:
(a) you can picture every detail of the event.
(b) you have rehearsed the memory many times.
(c) the memory has shifted from short-term to long-term memory.
(d) you have object physical evidence.

(19) The chauffeur for Princess Diana was unable to remember what happened the night of the fatal crash. The chauffeur experienced:
(a) anterograde amnesia.
(b) retrograde amnesia.
(c) short-term memory loss.
(d) a flashbulb memory.
(20) When people recover from retrograde amnesia, they tend to first remember:
   (a) their most recent memories.
   (b) their oldest memories (e.g., from childhood).
   (c) items from short-term memory.
   (d) the memories just after the accident that caused amnesia.

(21) Which type of memory seems to be less affected by amnesia?:
   (a) explicit memory.
   (b) implicit memory.
   (c) fast memory.
   (d) slow memory.

(22) The amnesia suffered by patient HM is best described as:
   (a) poor short term memory, normal long term memory.
   (b) normal short term memory, poor long term memory.
   (c) poor short term memory, poor storage of new information in long term memory.
   (d) normal short term memory, poor long term memory of new information.

(23) Given a complicated mirror-drawing task over several days, patient HM:
   (a) remembered previously doing the task and did not improve over the days.
   (b) could not remember previously doing the task and did not improve over the days.
   (c) remembered previously doing the task and improved over the days.
   (d) could not remember previously doing the task and improved over the days.

(24) Infantile amnesia refers to the observation that:
   (a) children younger than 4 have very poor long term memory.
   (b) children younger than 4 are unable to learn new information.
   (c) adults cannot remember much of what happened to them when they were younger than 4.
   (d) adults cannot imagine what it is like for children younger than 4 to remember something.

(25) The current view of memory researchers is that repression of unpleasant memories:
   (a) only happens through therapy.
   (b) is similar to amnesia.
   (c) is the “opposite” of flashbulb memories.
   (d) does not happen.

(26) If you cannot study in the same context where you will be tested, then your best strategy is to study:
   (a) in one context.
   (b) in many contexts.
   (c) near the testing room.
   (d) in a noisy environment.
(27) In the levels of processing theory of memory, deeper processing leads to:
(a) better recall.
(b) worse recall.
(c) better recall on a deep processing recall task.
(d) worse recall on a shallow processing recall task.

(28) **Intention** to learn a set of items:
(a) hardly influences memory recall.
(b) is necessary for the levels of processing effect to happen.
(c) only matters for deep processing.
(d) matters most for shallow processing.

(29) When making a Judgment of Learning estimate right after studying, students often:
(a) overestimate how much they will remember.
(b) underestimate how much they will remember.
(c) confuse easily remembered items with difficult-to-remember items.
(d) avoid deep processing.

(30) Relative to the previous question, a Judgment of Learning estimate can be made more accurate by:
(a) using deep processing.
(b) taking into account encoding specificity effects.
(c) introducing a delay between study and the estimate.
(d) using shallow processing.

(31) You are studying with flashcards, where you sometimes study both sides of the cards and sometimes test yourself (see one side, guess the other side). To maximize your overall memory performance, what should you do when you successfully pass a test for a card?:
(a) continue to study but save time by no longer testing the card.
(b) stop studying but continue to test the card.
(c) continue to study but stop testing the card.
(d) stop studying and stop testing the card, so you can focus on cards that you have not yet learned.

(32) The main conclusion about *learning styles* is that:
(a) they do not exist.
(b) all teaching methods are basically the same regardless of learning style.
(c) it helps to tailor the teaching method to a learning style.
(d) it does not help to tailor the teaching method to a learning style.

(33) Subject SF was able to increase his memory span to 81 digits. He did this by:
(a) increasing rehearsal speed in the phonological loop.
(b) increasing the capacity of the phonological store.
(c) learning to use long term memory to do the task.
(d) utilizing release from proactive interference.

(34) Which of the following is *not* necessary for the peg word system of memorization?:
(a) relate to-be-remembered items to a word in a well-known rhyme.
(b) use bizarre visual imagery to associate items to words.
(c) rehearse the rhyme many times.
(d) repeat the rhyme to evoke memory recall.
(35) Patient S had unusually good memory; this was (in part) because he had synesthesia. His memory ability is similar to the _______ approach to improving memory:
(a) level of processing.
(b) method of loci
(c) dual n-back task.
(d) retrieval practice.

(36) The conclusion of studies of “brain training” programs is that they:
(a) increase fluid intelligence.
(b) improve performance on the trained task.
(c) do not lead to improved performance on untrained tasks.
(d) both (b) and (c).

(37) The effect of sleep on memory seems to be that sleep:
(a) strengthens memories.
(b) promotes encoding specificity.
(c) promotes better use of memories.
(d) is similar to retrieval practice.

(38) The problem with a definitional approach to concepts is that:
(a) we are not sure about how to define all concepts.
(b) different people have different definitions for the same concept.
(c) people’s representations of concepts do not seem to be definitions.
(d) some concepts are mental images.

(39) The stimuli in the Posner & Keele (1968) study of prototypes were:
(a) rotated 3D block images.
(b) random dot patterns.
(c) word lists.
(d) digits.

(40) In the prototype theory of concepts, a concept of an “office” might be:
(a) an average office.
(b) a typical office.
(c) an idealized office.
(d) any of the above.

(41) In the Posner & Keele (1968) study of prototypes, the experimental measure was:
(a) time to classify a stimulus.
(b) number of correct classifications.
(c) similarity rating.
(d) distance between stimuli.

(42) Prototype theory has trouble explaining ad hoc concepts. The trouble is that prototypes:
(a) for such concepts become the same as definitions.
(b) cannot include the variability of such concepts.
(c) are a single “thing” in memory.
(d) appear to be created when needed.
(43) In the exemplar theory, a concept is:
   (a) multiple definitions.
   (b) a single “thing” that resides in memory.
   (c) the simplest statement that can be judged as true or false.
   (d) the set of instances of the concept in memory.

(44) In the exemplar theory, an item may feel like a prototype of a concept because it:
   (a) perfectly matches the definition of the concept.
   (b) closely matches the idealized instance of the concept in memory.
   (c) matches many different examples of the concept in memory.
   (d) perfectly matches one of the many different examples of the concept in memory.

(45) The study of Ratcliff & McKoon (1978) found evidence:
   (a) that people think in terms of exemplars.
   (b) propositions can be judged as true or false.
   (c) for within proposition priming.
   (d) for mental images being similar to real images.

(46) Which of the following is evidence that mental images are not similar to real images?:
   (a) most people cannot reinterpret a mental image when it is rotated.
   (b) propositions can contain as much information as an image.
   (c) it takes time to mentally rotate an image.
   (d) some people report having very fuzzy mental images.

(47) Kosslyn’s (1976) experiment on size effects in mental images found that people accessed
   mental information:
   (a) faster for a mental depiction than for a mental description.
   (b) faster for big body parts than for small body parts.
   (c) at different speeds for different modes of thinking and for different sizes of body parts.
   (d) both (a) and (c).

(48) The behavioral measure in the CogLab mental rotation experiment is:
   (a) time to respond “same” or “different.”
   (b) number of correct responses.
   (c) time to form a mental image.
   (d) estimated rotation angle between the stimuli.

(49) The mental rotation experiment suggests that:
   (a) mental images are all propositions.
   (b) some aspects of mental images are like real images.
   (c) mental images are strongly influenced by propositions.
   (d) some people have low quality mental images.

(50) A proposition is:
   (a) the simplest statement that can be judged as true or false.
   (b) a relationship between concepts.
   (c) a learned prototype.
   (d) both (a) and (b).
Exam 4

Your score on this exam will count toward 15% of your final grade. Each question is worth 2 points. Enter your answer on the scantron sheet. Enter only one choice for each question. There is no need to put your name on this exam, but do hand it in with your scantron sheet.

(1) An implication of saying that language is an instinct is that:
   (a) children will tend to learn the language spoken by their parents.
   (b) new born infants already know their native tongue.
   (c) people have an innate ability to work with some language.
   (d) people have to learn only the “slang” parts of a language.

(2) We can be confident that children do not learn language only by mimicking what they hear from adults because:
   (a) adults are poor teachers because they do not speak properly.
   (b) adults do not know the rules of language.
   (c) children say things that they would never hear an adult say.
   (d) children make too many mistakes.

(3) A pidgin is:
   (a) not a language.
   (b) a minimalist language.
   (c) non-verbal communication.
   (d) a special type of accent for people on slave plantations.

(4) A creole is:
   (a) a language.
   (b) a sign language.
   (c) a proto-language.
   (d) only spoken by children.

(5) African American Vernacular English (AAVE) is:
   (a) a pidgin.
   (b) a creole.
   (c) a language.
   (d) a grammar.
(6) The difference between a dialect and a language is:
   (a) grammar.
   (b) proper pronunciation.
   (c) co-articulation.
   (d) cultural conventions about which is “standard.”

(7) An AAVE speaker who says something like “I don’t think you ready.” is:
   (a) deliberately ignoring Standard American English grammar.
   (b) speaking improperly.
   (c) speaking correctly.
   (d) misapplying the causative rule.

(8) The two fundamental properties of language are:
   (a) phonemes and gestures.
   (b) action and reaction.
   (c) symbols and grammar.
   (d) fracture and coding.

(9) Which of the following best describes grammar?:
   (a) it relates sounds to concepts.
   (b) it is necessary for communication.
   (c) it is the rules of word order.
   (d) it is sufficient for communication.

(10) In some sentences the first word in a sentence imposes constraints on the last word of
     the sentence. This property is called a:
     (a) long-term dependency.
     (b) short-term dependency.
     (c) working dependency.
     (d) morpheme.

(11) Which of the following is fundamentally different from the other three?:
     (a) grammar.
     (b) long-term dependency.
     (c) phrase trees.
     (d) re-write rules.

(12) An advantage of learning language as rules for phrases is that:
     (a) recursion is easy to learn.
     (b) it avoids problems with ambiguity.
     (c) it makes it easier to learn multiple uses of a word.
     (d) it makes it easier to generate nonsense sentences.

(13) *Language universals* refer to the observation that:
     (a) all languages use grammar.
     (b) everyone who can (e.g., can hear) uses *speech* for language.
     (c) there are rules about the grammars used in human languages.
     (d) all languages use words.
(14) Words are:
(a) arbitrarily related to concepts.
(b) described by morphemes.
(c) headless.
(d) always defined by re-write rules.

(15) The smallest element of language with meaning is called a:
(a) word.
(b) compound word.
(c) head.
(d) morpheme.

(16) Which of the following is in the mental lexicon?:
(a) prefixes.
(b) suffixes.
(c) words.
(d) all of these.

(17) The interesting finding about the word wug is that:
(a) no one can agree on the plural form of the word.
(b) children assume the plural form is wugs.
(c) it does not follow the normal rules for pluralization.
(d) it is a headless noun.

(18) In English the head of a word is the:
(a) first syllable.
(b) last syllable.
(c) leftmost morpheme.
(d) rightmost morpheme.

(19) To understand language requires doing something like building phrase trees in reverse. This procedure is called:
(a) anomia.
(b) re-write rules.
(c) parsing.
(d) reading.

(20) The term *mentalese* refers to:
(a) phrases for communication.
(b) headless compound nouns.
(c) language universals.
(d) a non-language based form of thinking.

(21) In a lexical decision task, reaction time for a word/non-word judgment is shortest when the preceding:
(a) word is of the same part of speech.
(b) word is semantically related to the test word.
(c) item is not a word.
(d) item is part of the same phrase.
(22) The two basic problems of parsing are:
(a) headless nouns and language universals.
(b) mentalese and re-write rules.
(c) phrases and pluralization.
(d) word order and multiple meanings.

(23) The significance of a sentence like *Time flies like an arrow.* is that:
(a) it is ambiguous.
(b) people do not generally notice the ambiguity of the sentence.
(c) it is grammatically correct.
(d) no one understands it.

(24) Schemas are necessary for communication because:
(a) people often speak with grammatically incorrect sentences.
(b) people often say ambiguous sentences.
(c) grammar is not enough to insure communication.
(d) both (b) and (c).

(25) The sounds of speech are called:
(a) phonemes.
(b) syllables.
(c) words.
(d) articulators.

(26) A spoken vowel is formed by:
(a) shaping the vocal tract and pushing air through.
(b) relaxing the throat to allow air through.
(c) vibrating the vocal cords.
(d) closing and then opening the lips.

(27) You can “hear” someone smile because smiling changes:
(a) a person’s accent.
(b) how a person coarticulates.
(c) the produced frequencies of speech.
(d) how consonants are formed.

(28) Voicing refers to:
(a) how much air is pushed through the vocal tract.
(b) where air is impeded when forming a consonant.
(c) how air is impeded when forming a consonant.
(d) vibration of the vocal cords.

(29) Computer speech sounds funny because the computer:
(a) cannot produce phonemes.
(b) says every phoneme when humans would not.
(c) does not have vocal cords.
(d) does not coarticulate like people do.
(30) The adjective *helter-skelter* follows what rule of language? The first word:
(a) is the one that was learned at a younger age.
(b) is more difficult to say.
(c) has a leading consonant that impedes airflow the least.
(d) is the head of the word.

(31) Spelling of English words deviate from pronunciation because:
(a) people coarticulate.
(b) words are ambiguous.
(c) parsing is not the same thing as generating phrases.
(d) some consonants are voiced.

(32) The Korean hangul alphabet is easy to learn to pronounce because the characters:
(a) follow rules.
(b) indicate how to say the sounds.
(c) are grammatical.
(d) fit within the limits of working memory.

(33) When measuring infant language abilities, attaching a pacifier to a speaker and playing
the same sound with each suck causes the infant to:
(a) suck the pacifier faster.
(b) generate fewer sucks, apparently because it is bored.
(c) match the rate of sucking to the played sound.
(d) match the pitch of sucking to the played sound.

(34) Irregular verbs that do not follow the rule for forming past-tense tend to be commonly
used words. This is because:
(a) irregular verbs come from other languages.
(b) irregular verbs are formed by coarticulation.
(c) words are not used if you cannot recall the irregular form of the past tense.
(d) if you cannot remember that a verb is irregular, you will tend to use the general rule
for forming the past tense.

(35) In the CogLab Age of Acquisition experiment, the measure was:
(a) indicating whether you knew the meaning of a word.
(b) estimating when you learned a word.
(c) reaction time for whether an item was a word or not.
(d) estimating the number of words you learned before age 4.

(36) We can be confident that children make mistakes on the most confusing parts of
language because:
(a) they make very few mistakes.
(b) for any given rule, most children follow it most of the time.
(c) adults make the same mistakes as children.
(d) adults make the same *types* of mistakes as children.

(37) Everything else equal, the best time to easily learn to speak a second language is:
(a) preschool.
(b) elementary school.
(c) high school.
(d) college.
(38) Very soon after birth, infants have what kind of linguistic skills?:
   (a) they prefer the grammar rules for what will become their native tongue.
   (b) they can better discriminate phonemes for what will become their native tongue.
   (c) they respond to their name.
   (d) they can discriminate all phonemes, even for those not part of what will become their native tongue.

(39) Anomia refers to language difficulties:
   (a) with forming phrases.
   (b) understanding phrases.
   (c) with generating words.
   (d) with speaking phonemes.

(40) Someone with Wernicke’s aphasia tends to have:
   (a) stuttering, forced, speech.
   (b) problems with coarticulation.
   (c) fluid but empty speech.
   (d) problems making consonants.

(41) Broca’s area is located in the:
   (a) occipital lobe.
   (b) hind brain.
   (c) left hemisphere.
   (d) right hemisphere.

(42) The primary conclusion of studies teaching chimp language is that they:
   (a) learned some words but no grammar.
   (b) learned some grammar but no words.
   (c) could speak but not understand words.
   (d) could generate but not understand complex grammar.

(43) A chimp trained in American Sign Language has language skills about the same as:
   (a) a newborn human infant.
   (b) an infant pre-schooler.
   (c) an infant middle schooler.
   (d) none of the above.

(44) The most serious problem with the studies of chimpanzee language skills was that researchers:
   (a) did not teach true American Sign Language.
   (b) were not fluent themselves in sign language.
   (c) excused errors in chimp signing as jokes or metaphors.
   (d) used conditioning as a teaching method.

(45) The idea that there are separate mental and physical worlds is known as:
   (a) Cartesian dualism.
   (b) materialism.
   (c) the Turing test.
   (d) mentalese.
(46) Distributed processing of information in the brain implies that:
   (a) consciousness arises from non-conscious processors.
   (b) there is no precise moment of consciousness.
   (c) there is no precise place in the brain where consciousness happens.
   (d) all of these.

(47) The conclusion of the Chinese room problem (as originally described) is:
   (a) that language is not enough for consciousness.
   (b) consciousness emerges from pairs of people.
   (c) materialism is the only viable option.
   (d) the Turing test is a bad test.

(48) The image below shows a “captcha”. It is most closely related to:

   (a) Cartesian dualism.
   (b) materialism.
   (c) the Turing test.
   (d) phrase trees.

(49) Some people worry that domesticated animals feel pain. In part, this is a question about:
   (a) intelligence.
   (b) materialism.
   (c) mentalese.
   (d) qualia.

(50) The possible existence of qualia is relevant to artificial intelligence because:
   (a) there seems to be no way to create an artificial intelligence with qualia.
   (b) if the qualia do not match human qualia, the artificial intelligence might go crazy.
   (c) qualia are necessary for language.
   (d) everyone has the same qualia.