**Chapter 1**

**Introduction to Cognitive Psychology**

**Test Bank**

Multiple Choice

1. A cognitive psychologist is *LEAST LIKELY* to study whether \_\_\_\_.

a. people can pay attention to multiple stimuli at once without losing accuracy

b. advertising using animation is more memorable than advertising using no animation

c. a group of people present affect how much is given to charity

d. the reading speed of college graduates differs from that of high school graduates

ANS: c REF: Cognitive Psychology Defined KEY: Bloom’s: Apply

2. The combination of rational with empirical methods so as to get the “best of both worlds” represents, in dialectical terms, a(n) \_\_\_\_.

a. thesis

b. antithesis

c. synthesis

d. antisynthesis

ANS: c REF: Cognitive Psychology Defined KEY: Bloom’s: Remember

3. Part of dialectic thinking includes a(n) \_\_\_\_, where a statement of belief is proposed.

a. antithesis

b. synthesis

c. thesis

d. pragmatics

ANS: c REF: Cognitive Psychology Defined KEY: Bloom’s: Remember

4. Part of dialectic thinking includes a(n) \_\_\_\_, where a counterstatement to previous beliefs emerges.

a. antithesis

b. synthesis

c. thesis

d. pragmatics

ANS: a REF: Cognitive Psychology Defined KEY: Bloom’s: Remember

5. The philosopher who believed that the route to knowledge is through thinking and logical analysis was \_\_\_\_.

a. Plato

b. Locke

c. Wundt

d. Aristotle

ANS: a REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

6. A rationalist \_\_\_\_.

a. uses logical analysis to understand the world and people’s relations to it

b. is a follower of Aristotle’s empiricist philosophy

c. supports the idea of monism over dualism

d. believes that knowledge is acquired through experience and observation

ANS: a REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

7. Rationalism is to \_\_\_\_ as empiricism is to \_\_\_\_.

a. observable evidence; theory

b. theory; observable evidence

c. manipulation; measure

d. hypothesis; theory

ANS: b REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Understand

8. Which approach emphasizes logical analysis as the means to acquiring new knowledge?

a. tabula rasa

b. synthesis

c. rationalism

d. empiricism

ANS: c REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

9. An empiricist \_\_\_\_.

a. believes that knowledge is acquired through experience and observation.

b. is a follower of Plato’s rationalist philosophy about the source of knowledge

c. supports the idea of mind-body dualism

d. believes that the mind and the body are separate entities

ANS: a REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

10. Which approach emphasizes observable evidence as the means to acquiring new knowledge?

a. rationalism

b. monism

c. empiricism

d. nativism

ANS: c REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

11. Theresa, the assistant principal of a middle school, often finds herself dealing with accusations of wrongdoing made by one student against another. When she does so, she will not accept circumstantial evidence. Instead, Theresa allows only evidence that she can see, or “hard,” observational evidence, to be used in deciding whether a student has violated rules. Theresa could be referred to as a(n) \_\_\_\_.

a. monist

b. empiricist

c. rationalist

d. nativist

ANS: b REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Apply

12. Elma, an automobile factory worker, learns how to install a car air conditioner by watching a fellow worker install the part. The knowledge Elma has just acquired is \_\_\_\_ acquired knowledge.

a. experimentally

b. reductively

c. innately

d. empirically

ANS: d REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Apply

13. Psychology is sometimes viewed as a merging of \_\_\_\_.

a. philosophy and monism

b. rationalism and physiology

c. physiology and empiricism

d. philosophy and physiology

ANS: d REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

14. Descartes is best described as having been a(n) \_\_\_\_.

a. functionalist

b. behaviorist

c. empiricist

d. rationalist

ANS: d REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

15. A philosopher who largely rejected acquisition of knowledge by empirical means was \_\_\_\_.

a. John Locke

b. Aristotle

c. David Hume

d. René Descartes

ANS: d REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

16. Which individual supported the rationalist view and largely rejected the pure empirical view?

a. Kant

b. Aristotle

c. Descartes

d. Locke

ANS: c REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

17. Locke believed that all knowledge is gained empirically, beginning at birth, when our minds are a blank slate, or \_\_\_\_.

a. *de dato*

b. *quae non*

c. *hic et nunc*

d. *tabula rasa*

ANS: d REF: Philosophical Origins of Psychology: Rationalism versus Empiricism

KEY: Bloom’s: Remember

18. Immanuel Kant \_\_\_\_.

a. believed in an integration of rationalism and empiricism

b. completely rejected all forms of rationalism and empiricism

c. believed only in rationalism

d. believed only in empiricism

ANS: a REF: Philosophical Origins of Psychology: Rationalism versus Empiricism KEY: Bloom’s: Understand

19. The goal of structuralism was to understand the “content” of the mind by \_\_\_\_.

a. synthesizing constituent parts of perceptions

b. analyzing perceptions into their constituent parts

c. observing responses to various stimuli

d. creating a cognitive framework for new ideas

ANS: b REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

20. Wilhelm Wundt’s idea of \_\_\_\_ involved looking inward at the contents of one’s consciousness.

a. projection

b. introversion

c. repression

d. introspection

ANS: d REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

21. Bill, an interior designer, believes that it is not enough to just place furniture in a room to create an aesthetically-pleasing tableau. He wants to know how the people who will live in the room will use the room and the furniture and objects in it and why they will use it the way they do. Bill’s approach seems most similar to the way \_\_\_\_ view understanding the mind.

a. Gestaltists

b. structuralists

c. neo-Freudians

d. functionalists

ANS: d REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Understand

22. Which example is most analogous to the goal of structuralism?

a. Scientists study an entire assembled jigsaw puzzle in order to understand each of the pieces.

b. Scientists look at how the pieces of a jigsaw puzzle fit together in order to understand the assembling process.

c. Scientists look at each piece of a jigsaw puzzle in order to understand the whole puzzle as assembled.

d. Scientists study the different ways a jigsaw puzzle can be assembled to form different images.

ANS: c REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Understand

23. The school of thought that focuses on answering the question of “What do people do and why do they do it?” is called \_\_\_\_.

a. Gestaltism

b. structuralism

c. psychoanalysis

d. functionalism

ANS: d REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Apply

24. Which of the following is *LEAST* consistent with the purpose of functionalism?

a. the study of an organism independent of its environment

b. the study of mental processes

c. the study and uses of consciousness

d. the study of the relationship between the organism and its environment

ANS: a REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Understand

25. Lorraine is conducting an experiment in which she eats an apple and attempts to analyze her experience. What technique is she using?

a. vivisection

b. introspection

c. behaviorism

d. naturalism

ANS: b REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Apply

26. A leader in guiding functionalism toward pragmatism was \_\_\_\_, whose chief functional contribution to the field of psychology was his landmark book, *Principles of Psychology*.

a. John Dewey

b. William James

c. Edward Lee Thorndike

d. Hermann Ebbinghaus

ANS: b REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

27. Pragmatism concerns itself most directly with the \_\_\_\_.

a. methods of acquiring knowledge

b. degree to which knowledge is empirical

c. philosophical implications of knowledge

d. usefulness of knowledge

ANS: d REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

28. Of the following, a pragmatist would most likely support the study of knowledge that \_\_\_\_.

a. exists for its own sake

b. can be used to help people become better educated

c. enables us to speculate further on the relationship between body and mind

d. has no specific use, but is highly interesting from a psychological perspective

ANS: b REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Apply

29. Associationism is a school of psychology that examines \_\_\_\_.

a. how elements of the mind become linked to each other to result in learning

b. how people come to evaluate the accuracy of their own memory and cognitions

c. the process of forming mental images of real objects and the relationships between them

d. the positive or negative evaluations of objects and events and how they develop

ANS: a REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

30. Which researcher examined the impact of rehearsal on memory using himself as a subject?

a. Tolman

b. Dewey

c. Kant

d. Ebbinghaus

ANS: d REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

31. The “law of effect” states that a stimulus will tend to produce a certain response over time if the \_\_\_\_.

a. stimulus is conditioned

b. organism is repeatedly rewarded for that response

c. organism is repeatedly punished for that response

d. stimulus and the response are both unconditioned

ANS: b REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

32. The landmark experiment in which dogs salivate at the sight of the person who feeds them provides an example of \_\_\_\_.

a. classically conditioned learning

b. instrumental learning

c. social learning

d. physiological psychology

ANS: a REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

33. Skinner’s argument included the idea of operant conditioning, which refers to his belief that \_\_\_\_.

a. the strengthening or weakening of behavior, depending upon the presence or absence of reinforcement or punishment, explains all human behavior

b. all human behavior can be explained by operant conditioning, involving the strengthening or weakening of behavior, depending only on the presence of punishment

c. human behavior is highly unpredictable and, as a result, only some human behavior can be explained in terms of reinforcement-punishment relationships

d. human behavior cannot be understood without taking into account the purpose of the behavior

ANS: a REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Understand

34. John Watson, the founder of radical behaviorism, was an American psychologist who \_\_\_\_.

a. rejected all aspects of functionalism

b. supported the functionalist movement and was one of its most ardent supporters

c. rejected some aspects of functionalism, but at the same time drew heavily from the functionalists

d. altered the course of functionalism and later renamed the movement “behaviorism”

ANS: c. REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

35. Which of the following is a legitimate criticism of behaviorism?

a. The behavioristic principles did not explain language learning well.

b. The law of effect did not generalize to humans.

c. Classical conditioning only works on animals.

d. All of the above are legitimate criticisms.

ANS: a REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

36. Gestalt psychology has most greatly influenced, specifically, the study of \_\_\_\_.

a. emotion

b. insight

c. behavior

d. linguistics

ANS: b. REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Remember

37. Which behaviorist was willing to look inside the “black box?”

a. Tolman for his work with mazes

b. Pavlov for his work with dogs.

c. Skinner for his work with rats.

d. Watson for his work with Little Albert.

ANS: a REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Understand

38. Karl Lashley’s work in biological psychology led him to work with which key issue that deals with the location of individual cognitive processes in the brain?

a. Monistic localization in brain function

b. Prosopagnosia

c. The brain as an organizer of behavior

d. Hysteresis

ANS: c REF: Emergence of Cognitive Psychology KEY: Bloom’s: Understand

39. When developing a \_\_\_\_ computer system, the goal is to have a system that demonstrates intelligent processing of information.

a. artificial intelligence (AI)

b. engineered intelligence (EI)

c. technologically engineered intelligence (TEI)

d. information processing approach

ANS: a REF: Emergence of Cognitive Psychology KEY: Bloom’s: Remember

40. Who is known for the development of the concept “modularity of the mind”?

a. B.F. Skinner

b. Jerry Fodor

c. Albert Bandura

d. Donald Broadbent

ANS: b REF: Emergence of Cognitive Psychology KEY: Bloom’s: Remember

41. \_\_\_\_ is the belief that most human behavior explains how people think.

a. Associationism

b. Behaviorism

c. Cognitivism

d. Gestantism

ANS: c REF: Emergence of Cognitive Psychology KEY: Definition

42. The idea of the modularity of the mind was also stated, albeit in different terms, by Franz Joseph Gall, a(n) \_\_\_\_.

a. Freudian

b. phrenologist

c. associationist

d. behaviorist

ANS: b REF: Emergence of Cognitive Psychology KEY: Bloom’s: Remember

43. Christia is in the process of developing a research idea. She currently is reviewing various \_\_\_\_, which consists of explanatory principles for the phenomenon of interest.

a. correlational studies

b. dependent variables

c. hypotheses

d. theories

ANS: d REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

44. After conducting an experiment, the means for the two groups are not identical which may suggest a difference between the two groups. However, in order to be sure, you need to analyze the experimental results in terms of the likelihood that the result simply occurred by chance. This is called \_\_\_\_.

a. statistical significance

b. practical significance

c. descriptive statistics

d. meta-analysis

ANS: a REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Understand

45. Dorothy conducted an experiment in which there was a 20 point difference between the experimental and control group. The statistical test suggests that this result did not occur simply by chance. Dorothy’s results are said to have (found) \_\_\_\_.

a. statistical significance

b. practical significance

c. descriptive statistics

d. meta-analysis

ANS: a REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

46. In an experimental design, what is often the variable of interest that is being manipulated?

a. extraneous variable

b. independent variable

c. dependent variable

d. confounding variable

ANS: b REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

47. In an experimental design, what is often the outcome or the variable that is being measured (e.g., score on a test)?

a. extraneous variable

b. independent variable

c. dependent variable

d. confounding variable

ANS: c REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

48. Erica is conducting experimental research in which she is looking at the effect of type of music on intellectual development. What is the independent variable in this example?

a. type of music

b. intellectual development

c. the control group

d. the experimental group

ANS: a REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

49. Erica is conducting experimental research in which she is looking at the effect of type of music on intellectual development. What is the dependent variable in this example?

a. type of music

b. intellectual development

c. the control group

d. the experimental group

ANS: b REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

50. When compared to the population, a \_\_\_\_ does a good job of reflecting many of the characteristics of the population.

a. systematic sampling

b. cross-sectional design

c. random sample

d. representative sample

ANS: d REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

51. James was interested in a new study technique and whether it would have an impact on the retention of information when compared to a traditional study method. James had the experimental group, with the new study technique, study psychology, while the other group, with the old technique, studied Greek. In this example, the type of material (psychology versus Greek) would be an example of (a) \_\_\_\_.

a. antithesis

b. confounding variable

c. random sample

d. representative sample

ANS: b REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

52. A(n) \_\_\_\_ is left uncontrolled in an experiment. Such a variable could contribute to difference in performance making it difficult to interpret the results of the experiment.

a. independent variable

b. confounding variable

c. dependent variable

d. controlled variable

ANS: b. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

53. In a \_\_\_\_, every individual in the population of interest has an equal chance of being selected for an experiment.

a. representative sample

b. single-subject design

c. random sample

d. systematic sampling

ANS: c. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

54. Which type of study simply looks for a statistical relationship between two or more variables without manipulating the variables of interest?

a. quasi-experimental design

b. multivariate statistics

c. correlation

d. experimental design

ANS: c. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

55. Brian was playing a game of three truths and a lie with some of his friends. The goal of the group is to identify the lie. Brian observed that the bigger the lie, the more the person would scratch his/her face. He thought that if he plotted amount of scratching by severity of lie that there would be a relation. Brian is thinking of what type of study?

a. quasi-experimental design

b. multivariate statistics

c. correlation

d. experimental design

ANS: c. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

56. Which type of research is interested in identifying which parts of the brain and what specific brain activity are associated with particular cognitive tasks?

a. psychobiological research

b. cerebral relational analysis

c. structural relational analysis

d. biological research

ANS: a. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

57. Which technique for studying the brain occurs after the death of the individual, and relates function prior to death to observable brain features after death?

a. postmortem

b. in vivo

c. aspiration lesions

d. cryogenic blockade

ANS: a. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

58. Which technique for studying the brain occurs while the individual is alive, and specific cerebral damage is conducted to see the effects on function?

a. postmortem

b. cryogenic blockade

c. extracellular unit recording

d. in vivo

ANS: d. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

59. Yaun participates in an experiment in which he sees various stimuli on a computer screen. After the experiment, Yaun is to provide feedback about what he thought was going on cognitively. This is an example of \_\_\_\_.

a. naturalistic observation

b. individual observation

c. case study

d. self-report

ANS: d. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

60. Lequoia decides to conduct a study at the mall. She watches people at the mall for very specific behavior and simply keeps track of the number of times the behavior occurred for various groups. This is be an example of \_\_\_\_.

a. naturalistic observation

b. structuralism

c. case study

d. self-report

ANS: a REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

61. With \_\_\_\_\_, researchers program computers to imitate a given human function or process, or to solve a problem in the same way a human would.

a. computer simulations

b. ecological programming

c. social cognition

d. naturalistic observation

ANS: a REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

62. Karpicke (2009) developed a task in which participants had to learn and recall Swahili-English word pairs. After subjects first recalled the meaning of a word, that pair was either dropped, presented twice more in a study period, or presented twice more in text periods. Subjects took a final recall test one week later. Which research method was used here?

a. artificial intelligence

b. controlled laboratory experiment

c. neuroscientific research

d. self-report

ANS: b REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

63. Ecological validity refers to the degree to which lab data hold true when altered to account for \_\_\_\_.

a. ecological differences between the lab and the outside environment

b. the degree to which data gathered in a lab will apply outside the lab, given the influences of the environment on cognitive activity

c. the accuracy of predictions of how test subjects will react when placed in an environment with different ecological relationships

d. the effect ecological changes have on the behavior of organisms in the particular environment

ANS: b REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Understand

64. Mrs. M has difficulties with managing relationships. She is paranoid about anything that is said and often interprets comments as an attack on her or her family. These symptoms and others are studied by a therapist for years and then written up to help others understand her particular constellation of symptoms. This is an example of a \_\_\_\_.

a. naturalistic observation

b. psychobiological research

c. case study

d. self-report

ANS: c REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

65. Which theme of cognitive psychology relates to the relative contributions of our genetic inheritances and our surrounding environments?

a. structures versus processes

b. nature versus nurture

c. biological versus behavioral methods

d. rationalism versus empiricism

ANS: b REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

66. Which theme of cognitive psychology relates to how we discover truth about ourselves and the world, through the use of reason and logic or through observing and testing what we can sense?

a. rationalism versus empiricism

b. biological versus behavioral methods

c. structures versus processes

d. nature versus nurture

ANS: a REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

67. \_\_\_\_\_ is a cross-disciplinary approach that uses ideas and methods from cognitive psychology, cognitive neuroscience, AI, philosophy, linguistics, and anthropology.

a. Mind-brain studies

b. Cognitivism

c. Cognitive science

d. Biobehavioral psychology

ANS: c. REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Remember

68. The \_\_\_\_ theme of cognitive psychology relates to whether we should focus on the content of the human mind or should focus on the processes of human thinking.

a. rationalism versus empiricism

b. domain generality versus domain specificity

c. structures versus processes

d. nature versus nurture

ANS: c REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

69. The \_\_\_\_ theme of cognitive psychology relates to whether one should use carefully controlled experiments or use natural observations.

a. structures versus processes

b. validity of inferences versus ecological validity

c. nature versus nurture

d. domain generality versus domain specificity

ANS: b REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

70. Which major theme of cognitive psychology looks at the extent we use highly controlled experiments versus naturalistic techniques?

a. biological versus behavioral methods

b. validity of inferences versus ecological validity

c. rationalism versus empiricism

d. structures versus processes

ANS: b REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

71. Which major theme for cognitive psychology relates to whether research should focus on fundamental cognitive processes or focus on practical uses for the knowledge that results from the experiment?

a. domain generality versus domain specificity

b. structures versus processes

c. applied versus basic research

d. rationalism versus empiricism

ANS: c REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

72. Which major theme of cognitive psychology relates to whether the brain should be studied through methods like sophisticated imaging techniques or should focus on measurable performance like how many items from a list can be recalled?

a. biological versus behavioral methods

b. validity of inferences versus ecological validity

c. nature versus nurture

d. rationalism versus empiricism

ANS: a REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

73. Santiago says that in order to understand cognitive processes, we need to look directly at the brain to see how it functions. Ayami disagrees and says that we need to look at how people perform on various cognitive tasks. This disagreement is an example of the theme of \_\_\_\_.

a. biological versus behavioral methods

b. validity of inferences versus ecological validity

c. nature versus nurture

d. rationalism versus empiricism

ANS: a. REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Apply

74. Dr. Rubiosa studies the formation of internal representations of abstract ideas while Dr. Collingswood focuses on how internal representations interact and affect each other and how they affect cognition. Which major theme does this illustrate?

a. nature versus nurture

b. rationalism versus empiricism

c. structure versus processes

d. applied versus basic research

ANS: c. REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Apply

75. Santiago and Ayami disagree on the direction of their research lab. Santiago is simply interested in a particular phenomenon and wants to study it for the pure sake of knowledge; Ayami, however, wants to be able to take what is learned and use it in practical settings. Their disagreement is an example of \_\_\_\_.

a. nature versus nurture

b. rationalism versus empiricism

c. structure versus processes

d. applied versus basic research

ANS: d REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Apply

Essay

1. Briefly summarize each of the antecedents to cognitive psychology; include the paradigms’ founders and main tenets or beliefs in your discussion.

ANS:

|  |  |  |
| --- | --- | --- |
| APPROACH | FOUNDER | MAIN TENETS |
| Functionalism | James | Seeks to understand what people do and why they do it. This principal question about processes was in contrast to that of the structuralists, who had asked what the elementary contents (structures) of the human mind are. Functionalists held that the key to understanding the human mind and behavior was to study the processes of how and why the mind works as it does, rather than to study the structural contents and elements of the mind. |
| Structuralism | Wundt  Titchener | Seeks to understand the structure (configuration of elements) of the mind and its perceptions by analyzing those perceptions into their constituent components (affection, attention, memory, and sensation). |
| Pragmatism | Dewey | Pragmatists believe that knowledge is validated by its usefulness: What can you do with it? Pragmatists are concerned not only with knowing what people do; they also want to know what we can do with our knowledge of what people do. |
| Synthesis: Associationism | Ebbinghaus  Thorndike | Associationism examines how elements of the mind, such as events or ideas, can become associated with one another to result in a form of learning. |
| Behaviorism (extreme form of associationism) | Pavlov  Watson  Skinner | Behaviorism focuses only on the relation between observable behavior and environmental events or stimuli. The idea was to make physical whatever others might have called “mental.” Behaviorism may be considered an extreme version of associationism. It focuses entirely on the association between the environment and an observable behavior. According to strict, extreme (“radical”) behaviorists, any hypotheses about internal thoughts and ways of thinking are nothing more than speculation |
| Gestalt psychology | Koehler  Wertheimer | Gestalt psychology states that we best understand psychological phenomena when we view them as organized, structured wholes. According to this view, we cannot fully understand behavior when we only break phenomena down into smaller parts. |
| Synthesis: Cognitivism | Miller  Simon  Neisser | Cognitivism is the belief that most human behavior explains how people think. It rejects the behavioristic notion that psychologists should avoid studying mental processes just because they are unobservable. Cognitivism is, in part, a synthesis of earlier forms of analysis, such as behaviorism and Gestaltism. Like behaviorism, it adopts precise quantitative analysis to study how people learn and think; like Gestaltism, it emphasizes internal mental processes. |

REF: Psychological Origins of Cognitive Psychology | Emergence of Cognitive Psychology KEY: Bloom’s: Understand

2. Briefly summarize the seven major themes for cognitive psychology.

ANS: 1. Nature versus nurture: We can explore how covariations and interactions in the environment (e.g., an impoverished environment) adversely affect someone whose genes otherwise might have led to success in a variety of tasks.

2. Rationalism versus empiricism: We can combine theory with empirical methods to learn the most we can about cognitive phenomena.

3. Structures versus processes: Instead of focusing solely on the study of the contents or of the processes of the mind, we can explore how mental processes operate on mental structures.

4. Domain generality versus domain specificity: When studying processes, we can explore which might be domain general and which might be domain specific.

5. Validity of causal inferences versus ecological validity: We can combine a variety of methods, including laboratory methods and more naturalistic ones, to converge on findings that hold up, regardless of the method of study.

6. Applied versus basic research: We can combine the two kinds of research so that basic research leads to applied research, which leads to further basic research, and so on.

7. Biological versus behavioral methods: We can try to synthesize biological and behavioral methods so that we understand cognitive phenomena at multiple levels of analysis.

REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Understand

3. Define the rationalist and empiricist positions.

ANS: A rationalist believes that the route to knowledge is through thinking and logical analysis. That is, a rationalist does not need any experiments to develop new knowledge. A rationalist who is interested in cognitive processes would appeal to reason as a source of knowledge or justification. An empiricist believes that we acquire knowledge via empirical evidence— that is, we obtain evidence through experience and observation. To explore how the human mind works, empiricists would design experiments and conduct studies in which they could observe the behavior and processes of interest to them. Empiricism therefore leads directly to empirical investigations of psychology.

REF: Philosophical Origins of Psychology: Rationalism versus Empiricism KEY: Bloom’s: Understand

4. Explain the terms dialectic, thesis, and antithesis and how they relate to each other.

ANS: A dialectic is a developmental process whereby ideas evolve over time through a back-and-forth exchange of ideas; in a way, it is like a discussion spread out over an extended period of time. The dialectical process looks like this:

1. A thesis is proposed. A thesis is a statement of belief. After a while, however, certain individuals notice apparent flaws in the thesis.

2. An antithesis emerges. Eventually, or perhaps even quite soon, an antithesis emerges. An antithesis is a statement that counters a thesis.

3. A synthesis integrates the viewpoints. Sooner or later, the debate between the thesis and the antithesis leads to a synthesis, which integrates the most credible features of each of two (or more) views.

REF: Cognitive Psychology Defined KEY: Bloom’s: Understand

5. Describe the basic premise behind behaviorism and point out what weaknesses led

to the cognitive revolution.

ANS: Behaviorism focuses only on the relation between observable behavior and environmental events or stimuli. The idea was to make physical whatever others might have called “mental.” Behaviorism may be considered an extreme version of associationism. It focuses entirely on the association between the environment and an observable behavior. According to strict, extreme (“radical”) behaviorists, any hypotheses about internal thoughts and ways of thinking are nothing more than speculation.

Behaviorism was challenged on many fronts such as language acquisition, production, and comprehension. First, although it seemed to work well to account for certain kinds of learning, behaviorism did not account as well for complex mental activities, such as language learning and problem solving. Second, more than understanding people’s behavior, some psychologists wanted to know what went on inside the head. Third, using the techniques of behaviorism to study nonhuman animals was often easier than studying human ones. Nonetheless, behaviorism continues as a school of psychology, although not one that is particularly sympathetic to the cognitive approach, which involves metaphorically and sometimes literally peering inside people’s heads to understand how they learn, remember, think, and reason.

REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Analyze

6. Briefly explain the differences in Plato and Aristotle’s approaches to acquiring knowledge and how they find their ways into contemporary cognitive psychology.

ANS: Plato was a rationalist. A rationalist believes that the route to knowledge is through thinking and logical analysis. That is, a rationalist does not need any experiments to develop new knowledge. A rationalist who is interested in cognitive processes would appeal to reason as a source of knowledge or justification. In contrast, Aristotle (a naturalist and biologist as well as a philosopher) was an empiricist. An empiricist believes that we acquire knowledge via empirical evidence— that is, we obtain evidence through experience and observation. Empiricism therefore leads directly to empirical investigations of psychology. In contrast, rationalism is important in theory development. Rationalist theories without any connection to observations gained through empiricist methods may not be valid; but mountains of observational data without an organizing theoretical frame- work may not be meaningful. We might see the rationalist view of the world as a thesis and the empirical view as an antithesis.

REF: Philosophical Origins of Psychology: Rationalism versus Empiricism KEY: Bloom’s: Analyze

7. Briefly describe a correlational study and an experiment and then compare and contrast the two types of designs.

ANS: In controlled experimental designs, an experimenter usually will conduct research in a laboratory setting. The experimenter controls as many aspects of the experimental situation as possible. Basically, the two kinds of variables in any given experiment are independent and dependent variables. Independent variables are aspects of an investigation that are individually manipulated, or carefully regulated, by the experimenter, while other aspects of the investigation are held constant (i.e., not subject to variation). Dependent variables are outcome responses, the values of which depend on how one or more independent variables influence or affect the participants in the experiment.

A correlation is a description of a relationship. The correlation coefficient describes the strength of the relationship. The closer the coefficient is to 1 (either positive or negative), the stronger the relationship between the variables is. The sign (positive or negative) of the coefficient describes the direction of the relationship. A positive relationship indicates that as one variable increases (e.g., vocabulary size), another variable also increases (e.g., reading comprehension). A negative relationship indicates that as the measure of one variable increases (e.g., fatigue), the measure of another decreases (e.g., alertness). No correlation—that is, when the coefficient is 0—indicates that there is no pattern or relationship in the change of two variables (e.g., intelligence and ear- lobe length). In this final case, both variables may change, but the variables do not vary together in a consistent pattern. Correlational studies are often the method of choice when researchers do not want to deceive their subjects by using manipulations in an experiment or when they are interested in factors that cannot be manipulated ethically (e.g., lesions in specific parts of the human brain). However, because researchers do not have any control over the experimental conditions, causality cannot be inferred from correlational studies.

REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Analyze

8. Both artificial intelligence programs and humans can be seen as processors of information. How has computer science influenced cognitive science?

ANS: Digital computers played a fundamental role in the emergence of the study of cognitive psychology. One kind of influence is indirect—through models of human cognition based on models of how computers process information. Another kind is direct— through computer simulations and AI. In computer simulations, researchers program computers to imitate a given human function or process. Examples are performance on particular cognitive tasks (e.g., manipulating objects within three-dimensional space) and performance of particular cognitive processes (e.g., pattern recognition). Some researchers have attempted to create computer models of the entire cognitive architecture of the human mind. Their models have stimulated heated discussions regarding how the human mind may function as a whole. Sometimes the distinction between simulation and AI is blurred. For example, certain programs are designed to simulate human performance and to maximize functioning simultaneously.

An alternative approach, simulation, looks at how chess grand masters solve chess problems and then seeks to function the way they do. The program would be successful if it chose, in a sequence of moves in a game, the same moves that the grand master would choose. It is also possible to combine the two approaches, producing a program that generally simulates human performance but can use brute force as necessary to win games.

REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Analyze

9. List three of the different research methods used by psychologists, as mentioned in the chapter, and describe how they differ from one another.

ANS: Answer not provided

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| --- | --- | --- | --- |
|  | CONTROLLED LABORATORY EXPERIMENTS | NEUROSCIENTIFIC RESEARCH | SELF-REPORTS |
| Random assignment of subjects | Usually | Not usually | Not applicable |
| Experimental control of independent variables | Usually | Varies widely, depending on the particular technique | Probably not |
| Sample size | May be any size | Often small | Probably small |
| Sample representativeness | May be representative | Often not representative | May be representative |
| Ecological validity | Not unlikely; depends on the task and the context to which it is being applied | Unlikely under some circumstances | Maybe |
| Information about individual differences | Usually deemphasized | Yes | Yes |
| Strengths | * Easy to administer, score, and statistically analyze * High probability of drawing valid causal inferences | * Provides “hard” evidence of cognitive functions * Alternative view of cognitive processes * Possibility to develop treatments for cognitive deﬁcits | * Access to introspective insights from participants’ point of view |
| Weaknesses | * Difﬁculty in generalizing results beyond a speciﬁc place, time, and task setting * Discrepancies between behavior in real life and in the laboratory | * Limited access to appropriate subjects and expensive equipment (for most researchers) * Small samples * Decreased generalizability when abnormal brains or animal brains are investigated | * Inability to report on processes occurring outside conscious awareness * Verbal protocols and self-ratings: May inﬂuence cognitive process being reported * Discrepancies between actual cognition and recollected cognitive processes and products |

|  |  |  |  |
| --- | --- | --- | --- |
|  | CASE STUDIES | NATURALISTIC OBSERVATIONS | COMPUTER SIMULATIONS AND ARTIFICIAL INTELLIGENCE |
| Random assignment of subjects | Highly unlikely | Not applicable | Not applicable |
| Experimental control of independent variables | Highly unlikely | No | Full control of variables of interest |
| Sample size | Almost certain to be small | Probably small | Not applicable |
| Sample representativeness | Not likely to be representative | May be representative | Not applicable |
| Ecological validity | High ecological validity for individual cases; lower generalizability to others | Yes | Not applicable |
| Information about individual differences | Yes; richly detailed information regarding individuals | Possible, but emphasis is on environmental distinctions, not on individual differences | Not applicable |
| Strengths | * Access to detailed information about individuals, including historical and current contexts * May lead to specialized applications for special groups (e.g., prodigies, persons with brain damage) | * Access to rich contextual information | * Exploration of possibilities for modeling cognitive processes * Allows clear hypothesis testing * Wide range of practical applications (e.g., robotics for performing dangerous tasks |
| Weaknesses | * Applicability to other persons * Limited generalizability due to small sample size and nonrepresentative sample | * Lack of experimental control * Possible influence on behavior due to presence of observer | * Limitations imposed by hardware and software * Simulations may imperfectly model the way that the human brain thinks |

REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Analyze

10. Cognition is generally adaptive. Explain this ability to adapt using forgetting as an example.

ANS: We can perceive, learn, remember, reason, and solve problems with great accuracy. And we do so even though we are constantly distracted by a plethora of stimuli. Forgetting is adaptive because it removes the distractions associated with irrelevant information.

REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Apply

11. Describe how René Descartes and John Locke applied rationalism and empiricism to understanding the human mind.

ANS: Descartes viewed the introspective, reflective method as being superior to empirical methods for finding truth. The famous expression *cogito,* *ergo sum* (I think, therefore I am) stems from Descartes. He maintained that the only proof of his existence is that he was thinking and doubting. Descartes felt that one could not rely on one’s senses because those very senses have often proven to be deceptive (e.g., think of optical illusions). Locke, in contrast, had more enthusiasm for empirical observation. Locke believed that humans are born without knowledge and therefore must seek knowledge through empirical observation. Locke’s term for this view was *tabula rasa* (meaning “blank slate” in Latin). The idea is that life and experience “write” knowledge on us. For Locke, then, the study of learning was the key to understanding the human mind. He believed that there are no innate ideas.

REF: Philosophical Origins of Psychology: Rationalism versus Empiricism KEY: Bloom’s: Evaluate

12. Choose one of the research designs addressed in the text and describe it. Then outline a cognitive-psychological experiment to illustrate your chosen design.

ANS:

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| --- | --- | --- | --- |
|  | CONTROLLED LABORATORY EXPERIMENTS | NEUROSCIENTIFIC RESEARCH | SELF-REPORTS |
| Random assignment of subjects | Usually | Not usually | Not applicable |
| Experimental control of independent variables | Usually | Varies widely, depending on the particular technique | Probably not |
| Sample size | May be any size | Often small | Probably small |
| Sample representativeness | May be representative | Often not representative | May be representative |
| Ecological validity | Not unlikely; depends on the task and the context to which it is being applied | Unlikely under some circumstances | Maybe |
| Information about individual differences | Usually deemphasized | Yes | Yes |
| Strengths | * Easy to administer, score, and statistically analyze * High probability of drawing valid causal inferences | * Provides “hard” evidence of cognitive functions * Alternative view of cognitive processes * Possibility to develop treatments for cognitive deﬁcits | * Access to introspective insights from participants’ point of view |
| Weaknesses | * Difﬁculty in generalizing results beyond a speciﬁc place, time, and task setting * Discrepancies between behavior in real life and in the laboratory | * Limited access to appropriate subjects and expensive equipment (for most researchers) * Small samples * Decreased generalizability when abnormal brains or animal brains are investigated | * Inability to report on processes occurring outside conscious awareness * Verbal protocols and self-ratings: May inﬂuence cognitive process being reported * Discrepancies between actual cognition and recollected cognitive processes and products |

|  |  |  |  |
| --- | --- | --- | --- |
|  | CASE STUDIES | NATURALISTIC OBSERVATIONS | COMPUTER SIMULATIONS AND ARTIFICIAL INTELLIGENCE |
| Random assignment of subjects | Highly unlikely | Not applicable | Not applicable |
| Experimental control of independent variables | Highly unlikely | No | Full control of variables of interest |
| Sample size | Almost certain to be small | Probably small | Not applicable |
| Sample representativeness | Not likely to be representative | May be representative | Not applicable |
| Ecological validity | High ecological validity for individual cases; lower generalizability to others | Yes | Not applicable |
| Information about individual differences | Yes; richly detailed information regarding individuals | Possible, but emphasis is on environmental distinctions, not on individual differences | Not applicable |
| Strengths | * Access to detailed information about individuals, including historical and current contexts * May lead to specialized applications for special groups (e.g., prodigies, persons with brain damage) | * Access to rich contextual information | * Exploration of possibilities for modeling cognitive processes * Allows clear hypothesis testing * Wide range of practical applications (e.g., robotics for performing dangerous tasks |
| Weaknesses | * Applicability to other persons * Limited generalizability due to small sample size and nonrepresentative sample | * Lack of experimental control * Possible influence on behavior due to presence of observer | * Limitations imposed by hardware and software * Simulations may imperfectly model the way that the human brain thinks |

Details of the experiment will vary.

REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

13. Design an experiment looking at study habits. Make sure to include the following terms: hypothesis, control group, experimental group, independent variable, dependent variable, and control and confounding variables.

ANS: An hypothesis, or statement of expected research outcomes should be stated. Independent variables are aspects of an investigation that are individually manipulated, or carefully regulated, by the experimenter, while other aspects of the investigation are held constant (i.e., not subject to variation). Dependent variables are outcome responses, the values of which depend on how one or more independent variables influence or affect the participants in the experiment. When the experimenter manipulates the independent variables, he or she controls for the effects of irrelevant variables and observes the effects on the dependent variables (outcomes). These irrelevant variables that are held constant are called control variables. Another type of variable is the confounding variable. Confounding variables are a type of irrelevant variable that has been left uncontrolled in a study. Obviously, when conducting research, we must be careful to avoid the influence of confounding variables. The experimental group receives the treatment of interest while the control group does not and serves as a comparison to identify the effects of the treatment.

Details of the experiment will vary.

REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Create

14. Identify some behavior of interest. Come up with a number of different hypotheses that might explain the behavior. For each hypothesis, include evidence that would support and evidence that would not support each hypothesis.

ANS: Hypotheses are tentative proposals regarding expected empirical consequences of the theory, such as the outcomes of research.

Details of the hypotheses will vary.

REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Create

15. What if cognitive processes did not interact with each other? Provide some examples of how our (cognitive) lives would be different—what would be the implications?

ANS: Although cognitive psychologists try to study and often isolate the functioning of specific cognitive processes, they know that these processes work together. For example, memory processes depend on perceptual processes. What you remember depends in part on what you perceive. But noncognitive processes also interact with cognitive ones. For example, you learn better when you are motivated to learn. Cognitive psychologists therefore seek to study cognitive processes not only in isolation but also in their interactions with each other and with noncognitive processes.

Details of the implications of non-interaction will vary.

REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Apply

16. Give an example from your own life in which you were classically conditioned.

ANS: Classical conditioning is learning that occurs when a neutral stimulus is paired with an unconditioned stimulus that reliably causes an unconditioned response. Because of this association, the neutral stimulus loses its neutrality and takes on the same power as the unconditioned stimulus to cause the response.

Details of the example will vary.

REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Apply

17. Explain how Ebbinghaus’s idea of *rehearsal* aids in learning in a classroom.

ANS: Through his self-observations, Ebbinghaus studied how people learn and remember material through rehearsal, the conscious repetition of material to be learned. Among other things, he found that frequent repetition can fix mental associations more firmly in memory. Thus, repetition aids in learning.

REF: Psychological Origins of Cognitive Psychology KEY: Bloom’s: Understand

18. How might research that is “basic” in the short run become practical and applied in the long run? Give an example.

ANS: Basic research seeks fundamental insights about cognition while applied research seeks effective uses of cognition in real-world settings.

Details of the example will vary.

REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Apply

19. You are working for a company developing a new customer response system. Explain what the advantages and disadvantages would be in terms of using a program based on artificial intelligence versus a computer simulation.

ANS: The advantages include:

* + Exploration of possibilities for modeling cognitive processes /machine learning
  + Allows clear hypothesis testing
  + Wide range of practical applications (e.g., robotics for performing dangerous tasks)

Disadvantages include:

* Limitations imposed by hardware and software
* Simulations may imperfectly model the way that the human brain thinks

REF: Research Methods in Cognitive Psychology KEY: Bloom’s: Apply

20. Explain the advantages that both applied and basic research have for society.

ANS: Basic research seeks fundamental insights about cognition while applied research seeks effective uses of cognition in real-world settings.

Details of the examples will vary.

REF: Fundamental Ideas in Cognitive Psychology KEY: Bloom’s: Apply