

PSYCHOLOGY ENTRANCE EXAMINATIONS

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

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Chapter 10

Intelligence

Explanations

1. c) sensory acuity.

Explanation: Snyderman and Rothman's study on the perception of intelligence among specialists found that key elements of intelligence commonly identified include abstract reasoning, problem-solving, and the capacity to acquire knowledge. Sensory acuity, which refers to the sharpness of the senses (such as sight and hearing), is typically not considered a central element of intelligence in this context. Therefore, nearly everyone in the study indicated the importance of abstract reasoning, problem-solving, and the capacity to acquire knowledge, but not sensory acuity.

2. a) a general mental ability that underlies all specific abilities.

Explanation: The g factor, or general intelligence factor, refers to a single underlying mental ability that influences performance on various cognitive tasks and is a common factor across different types of mental abilities. This concept was introduced by Charles Spearman, who used factor analysis to identify that individuals' performance across different intellectual tasks was positively correlated, indicating the presence of a general cognitive ability. While the g factor is identified through factor analysis and is a part of the psychometric approach to intelligence.

3. d) Intelligence

Explanation: Intelligence tests are specifically designed to measure a person's mental abilities, including aspects such as reasoning, problem-solving, memory, and understanding complex ideas. These tests aim to assess the overall cognitive capabilities of an individual, often resulting in an intelligence quotient (IQ) score that reflects their intellectual potential relative to others. While aptitude tests measure specific skills or abilities related to particular tasks or fields, intelligence tests are broader in scope, focusing on general mental abilities.

4. d) 150.

Explanation: The Intelligence Quotient (IQ) is calculated using the formula:

$$\text{IQ} = (\text{Chronological Age} / \text{Mental Age}) \times 100$$

For a 6-year-old child with a mental age of 9:

$$\text{IQ} = (9/6) \times 100 = 1.5 \times 100 = 150$$

Thus, the child's IQ is 150.

5. c) seven primary mental abilities.

Explanation: Louis Thurstone, an influential psychologist, challenged the concept of a single general intelligence factor (g) proposed by Charles Spearman. Through his extensive factor analysis of intercorrelations among various cognitive tests, Thurstone identified seven primary mental abilities that constitute intelligence. These abilities are verbal comprehension, word fluency, number facility, spatial visualization, associative memory, perceptual speed, and inductive reasoning. Thurstone's model emphasizes that intelligence is multifaceted and cannot be adequately represented by a single general ability alone.

6. b) how well people perform on standardized mental tests.

Explanation: The psychometric approach to intelligence is concerned with the measurement and quantification of cognitive abilities through standardized tests. This approach involves the use of various testing methods to assess different aspects of intelligence, such as reasoning, memory, and problem-solving skills. The results of these tests are typically used to derive scores that indicate an individual's cognitive abilities relative to others. Psychometricians analyze these test scores to identify patterns, develop theories of intelligence, and validate the reliability and validity of the tests themselves.

7. a) aptitude

Explanation: Aptitude tests are designed to predict a person's future performance or potential for achievement in a specific area. These tests assess an individual's ability to succeed in a particular field or skill by measuring their potential to learn and perform specific tasks. Examples of aptitude tests include the SAT (Scholastic Aptitude Test) and the GRE (Graduate Record Examination), which are used to predict a student's ability to succeed in college or graduate school, respectively. Unlike intelligence tests, which measure a broad range of cognitive abilities, aptitude tests focus on specific skills relevant to future performance.

8. c) are in large measure caused by environmental factors.

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Explanation: Most psychologists agree that racial gaps in test scores are primarily influenced by environmental factors rather than being a direct result of inherent differences in intelligence. Factors such as socio-economic status, educational opportunities, cultural biases in testing, access to resources, and varying levels of support can all contribute to differences in test scores among different racial groups. This perspective emphasizes the importance of considering the broader social context and working towards providing equitable educational and developmental opportunities for all individuals.

9. a) the speed of information processing.

Explanation: Researchers investigating the basic cognitive correlates of intelligence frequently focus on the speed of information processing. This is because quicker processing speeds are often associated with higher intelligence, reflecting an individual's ability to understand and respond to information rapidly. Studies have shown that individuals who can process information more swiftly tend to perform better on a variety of cognitive tasks, suggesting that this speed is a fundamental component of intellectual ability. This focus on processing speed helps to elucidate underlying mechanisms of intelligence and contributes to the broader understanding of cognitive function.

10. c) the cognitive approach to intelligence.

Explanation: The cognitive approach to intelligence focuses on understanding the cognitive processes underlying intellectual performance rather than just assessing performance itself. Dr. Kehlen's interest in how students arrive at their answers on IQ tests aligns with this approach because it seeks to investigate the cognitive mechanisms involved in solving problems and generating responses. This approach delves into factors such as reasoning, memory, attention, and decision-making to gain insight into intelligence. It contrasts with the psychometric approach, which primarily focuses on measuring intelligence through standardized tests, and the triarchic theory, which proposes three aspects of intelligence (analytical, creative, and practical) but doesn't necessarily prioritize understanding the cognitive processes involved.

11. d) intelligence

Explanation: Intelligence is typically defined as the ability to learn from experience, solve problems, and adapt to new situations. Therefore, the abilities involved in learning and adaptive behavior are often referred to as intelligence. These abilities encompass various cognitive functions such as reasoning, memory, comprehension, and problem-solving, which contribute to an individual's overall intellectual functioning. While aptitude tests may assess specific abilities related to future achievement in a particular domain, and social

competence measures interpersonal skills, intelligence assessments evaluate a broader range of cognitive capacities essential for learning and adapting to diverse environments.

12. a) an extra chromosome in the person's genetic makeup.

Explanation: Down syndrome, also known as trisomy 21, is typically caused by the presence of an extra copy of chromosome 21 in the person's genetic makeup. This additional chromosome results in developmental delays and physical characteristics associated with Down syndrome. It is a chromosomal abnormality that occurs during cell division in either the sperm or the egg before conception, leading to an extra chromosome being present in every cell of the body. This additional genetic material affects the individual's physical and cognitive development, resulting in intellectual disability and various health issues.

13. a) engaged in deductive reasoning.

Explanation: Deductive reasoning involves deriving specific conclusions from general principles or premises. In this scenario, the person starts with the general premise "All birds can fly" and applies it to the specific case of chickens. Therefore, if chickens are birds and all birds can fly, the conclusion that chickens can fly logically follows. This process aligns with deductive reasoning, where the conclusion necessarily follows from the premises if they are true.

14. c) the triarchic theory of intelligence.

Explanation: The triarchic theory of intelligence, proposed by psychologist Robert J. Sternberg, suggests that intelligence is composed of three parts:

Componential (Analytical): This aspect relates to the ability to analyze, evaluate, judge, or compare and contrast. It involves academic problem-solving and computation skills.

Experiential (Creative): This dimension refers to creativity, the ability to use existing knowledge to deal with new situations, and the ability to relate to and handle novel ideas.

Contextual (Practical): This part pertains to street smarts or practical intelligence, which involves the ability to adapt to, shape, and select environments.

15. d) contextual

Explanation: Sternberg's triarchic theory of intelligence identifies contextual intelligence as the ability to adapt to, shape, and select environments to meet one's goals. It involves understanding the practical application of one's strengths and weaknesses and navigating different situations effectively. This aspect of intelligence emphasizes the importance of considering the context in which behavior occurs and leveraging this understanding to achieve success in various domains of life. Therefore, the ability described in the question aligns with contextual intelligence.

Answer Key

16. a) The predictive validity of intelligence tests is not as high as their reliability.

Explanation: While intelligence tests generally demonstrate high reliability (consistency of measurement), their predictive validity (the ability to accurately predict future outcomes, such as academic or job performance) is typically not as high. While they can provide valuable insights into cognitive abilities, other factors beyond intelligence, such as motivation, socioeconomic status, and emotional intelligence, also play significant roles in determining future success. Therefore, while intelligence tests are reliable measures of cognitive abilities, their ability to predict real-world outcomes may be more limited.

17. b) visualize.

Explanation: Philip Johnson-Laird's research on the psychology of syllogisms suggests that individual's reason more effectively with syllogisms that are easier to visualize. This is because mental visualization aids in the construction and manipulation of mental models, which are key to understanding and solving syllogisms. When people can create clear mental images of the scenarios presented in syllogisms, they find it easier to deduce conclusions, leading to better reasoning performance.

18. b) componential intelligence

Explanation: Componential intelligence, as described by Sternberg's triarchic theory, encompasses the cognitive processes involved in analyzing and solving problems. This includes abilities such as logical reasoning, verbal comprehension, and perceptual reasoning, which are commonly assessed on intelligence tests. Experiential intelligence, related to creativity and insight, and contextual intelligence, involving practical problem-solving and adaptation to different environments, are important but are not typically directly measured on traditional intelligence tests.

19. c) mental age

Explanation: Binet's test was designed to measure a child's mental age, which refers to the level of cognitive functioning typically associated with a certain chronological age. So, if a child's performance on the test is equivalent to that of an average 8-year-old, their mental age is considered to be 8. This concept allows for the comparison of a child's intellectual abilities to those of children of different ages, providing insight into their level of cognitive development.

20. d) has all of these effects.

Explanation: Sorting children into gifted and nongifted educational groups can have multiple effects. Firstly, it can create a self-fulfilling prophecy, where children placed

in the gifted group may receive more attention and resources, leading to higher achievement, while those in the nongifted group may receive fewer resources and have lower expectations, potentially hindering their performance. This can exacerbate social inequalities and lead to increased social isolation between the groups. Additionally, if sorting is based on biased criteria, such as race or socioeconomic status, it can perpetuate racial segregation and prejudice. Therefore, all of these effects can result from sorting children into gifted and nongifted educational groups.

21. c) algorithm.

Explanation: An algorithm is a systematic and step-by-step approach to problem-solving. In the context of solving anagrams, using an algorithmic strategy means generating all possible permutations of the letters in the scrambled word until a meaningful word or phrase is formed. Unlike heuristics, which are more general problem-solving strategies that may not always guarantee a solution, algorithms provide a structured method for reaching a solution, making them particularly useful in situations where accuracy and completeness are important, such as in solving anagrams.

22. c) low motivation

Explanation: Eddie's high IQ score suggests that he has the cognitive ability to perform well academically. However, his consistently average grades despite this intelligence could be attributed to low motivation. Motivation plays a significant role in academic achievement, and individuals with high cognitive abilities may underperform if they lack the drive or interest to excel in school. Other factors like poor practical intelligence, contextual intelligence, or mild brain damage might impact performance.

23. c) WAIS-R

Explanation: The Wechsler Adult Intelligence Scale-Revised (WAIS-R) is the most commonly administered individual intelligence test for adults. It assesses multiple cognitive abilities, including verbal comprehension, perceptual organization, working memory, and processing speed. Its comprehensive nature and widespread use make it a standard tool for evaluating intellectual functioning in adult populations across various settings, including clinical and educational environments.

24. a) cross-sectional research.

Explanation: Most of the evidence for an age-related decline in intelligence has come from cross-sectional research. This type of research compares different age groups at a single point in time to observe differences in intelligence levels. While both cross-sectional

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and longitudinal studies have shown a decrease in fluid intelligence with age, cross-sectional studies have been particularly influential in highlighting the age-related decline. Longitudinal research, which follows the same individuals over time, also contributes to our understanding but can be more complex and time-consuming to conduct.

25. a) school grades

Explanation: IQ scores on standard intelligence tests are most highly correlated with school grades. This correlation suggests that individuals who perform well on IQ tests tend to also perform well academically in school. This relationship between IQ scores and academic achievement is well-established and reflects the cognitive abilities measured by IQ tests, such as verbal comprehension, mathematical reasoning, and problem-solving skills, which are essential for success in educational settings.

26. a) factor analysis.

Explanation: Factor analysis is a statistical technique used to identify patterns of correlations among variables. In intelligence testing, it helps identify underlying factors or dimensions that explain the correlations among various mental abilities measured by different test items. This method helps researchers identify the common factor, often referred to as the “g factor,” which represents general intelligence or overall cognitive ability. Factor analysis is crucial in constructing and validating intelligence tests by determining which items load onto the same factors and contribute to measuring intelligence. It allows researchers to understand the structure of intelligence and how different cognitive abilities relate to each other.

27. b) David Wechsler.

Explanation: David Wechsler defined intelligence as “the capacity to understand the world and the resourcefulness to cope with its challenges”. He emphasized that intelligence is not just about abstract thinking or problem-solving skills, but also includes the practical ability to adapt to one’s environment and the challenges it presents. Wechsler’s definition reflects a broader view of intelligence that goes beyond academic prowess to include adaptive and coping skills, which are essential for navigating the complexities of everyday life. This holistic approach to understanding intelligence has influenced the development of intelligence assessments and the interpretation of IQ scores.

28. b) Disagreement on the definition of intelligence.

Explanation: Human intelligence is a complex and multifaceted construct, and psychologists have long debated how best to define and measure it. Different theoretical

perspectives offer contrasting views on intelligence, leading to disagreement within the field. Some psychologists emphasize the importance of general cognitive abilities, while others argue for a broader understanding that includes diverse forms of intelligence. Additionally, cultural and societal factors influence perceptions of intelligence, further contributing to controversy in the field. As a result, the study of human intelligence remains a contentious and debated topic in psychology.

29. c) (A) is true, but (R) is false.

Explanation: Assertion (A) is true. Performance is indeed not always a reliable indicator of a person's intelligence because performance can be influenced by many other factors such as motivation, emotional state, physical health, and external conditions.

Reason (R) is false. While intelligence and performance are related, it is incorrect to say that high intelligence guarantees high performance. High intelligence often contributes to better performance, but other variables can affect the outcome, meaning high intelligence does not guarantee high performance in every situation.

30. d) (A) is false, but (R) is true.

Explanation: (A) is False: While the predictive power of intelligence tests for school performance is a topic of debate, it's not the primary controversy. Intelligence tests do have some correlation with academic success, but it's not a perfect predictor. Other factors like motivation, study habits, and access to educational resources also play a significant role.

(R) is True: Cultural bias is a major concern surrounding intelligence tests. Critics argue that these tests might favor certain cultural backgrounds or socioeconomic groups due to several reasons. Language: Tests might rely heavily on language skills that some cultures emphasize more than others. Content: The content of the test might be culturally specific, referencing experiences or knowledge unevenly distributed across different cultures. A test question about a historical event relevant to one culture might not be accessible to someone from a different background.

31. c) Alfred Binet.

Explanation: Alfred Binet, along with his colleague Theodore Simon, developed the first intelligence test, known as the Binet-Simon scale, in the early 20th century. This test was designed to measure a child's intellectual abilities and was intended to identify those who might need special education assistance in school. Sir Francis Galton, on the other hand, made significant contributions to the study of human intelligence but did not develop the

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first intelligence test. David Wechsler and Lewis Terman developed their own intelligence tests later, known as the Wechsler Intelligence Scales and the Stanford-Binet Intelligence Scales, respectively.

32. c) $IQ = (MA / CA) \times 100$.

Explanation: This formula calculates the Intelligence Quotient (IQ) by dividing the Mental Age (MA) by the Chronological Age (CA) and then multiplying the result by 100. It was proposed by German psychologist William Stern as a way to quantify intelligence test scores. The resulting IQ score represents an individual's level of intellectual development relative to their chronological age.

33. a) Wilhelm Stern.

Explanation: Wilhelm Stern, a German psychologist, is credited with introducing the concept of the intelligence quotient (IQ). In 1912, Stern proposed that intelligence could be measured by calculating the ratio of an individual's mental age (as determined by performance on intelligence tests) to their chronological age, and then multiplying the result by 100 to obtain the IQ score. This formula is expressed as:

$IQ = (\text{Chronological Age} / \text{Mental Age}) \times 100$

Stern's concept was foundational in the development of intelligence testing. While other psychologists, such as Lewis Terman and David Wechsler, made significant contributions to the development and popularization of intelligence tests, it was Stern who initially introduced the IQ concept.

34. b) To ensure that questions are pretested on people similar to the intended test-takers

Explanation: Standardization in intelligence testing involves administering the test to a representative sample of the population for which the test is designed. This process helps establish norms and ensure that the test is fair and unbiased across different populations. By pretesting questions on individuals similar to the intended test-takers, test developers can identify and eliminate any potential biases or ambiguities in the questions. This ensures that the test accurately measures the intended construct (intelligence) and provides reliable and valid results for all test-takers, regardless of their demographic background.

35. d) (A) is false, but (R) is true.

Explanation: Assertion (A): Group intelligence tests are mainly used for individualized assessments. This statement is false. Group intelligence tests are designed to be

administered to multiple individuals at the same time, typically in educational or organizational settings. They are not primarily used for individualized assessments, which are typically conducted using one-on-one tests to gain a more detailed and personalized understanding of an individual's abilities.

Reason (R): These tests can provide insights into a person's intellectual and social functioning. This statement is true. Group intelligence tests can provide valuable insights into various aspects of intellectual functioning, such as reasoning, problem-solving skills, and knowledge. They may also offer some insights into social functioning, particularly in how individuals perform in a group setting or under standardized testing conditions.

36. c) To ensure that questions reflect the prevailing definitions of the concept being measured.

Explanation: Content validity refers to the extent to which the items on a test represent the entire range of possible items that could be used to measure the construct being assessed. Therefore, the primary goal of content validity is to ensure that the questions on the test accurately reflect the domain or content of the construct being measured. This means that the questions should cover all relevant aspects of the construct and accurately represent its definition or concept.

37. c) Predictive validity

Explanation: Predictive validity measures how well a test score predicts future performance or behavior in a specific domain. In the context of educational testing, predictive validity assesses the extent to which a test score predicts future academic achievement, such as success in school or college. It helps determine if the test can accurately forecast an individual's future performance based on their current test scores. This type of validity is crucial for educational assessments as it informs decisions about academic placement, college admissions, and other educational interventions.

38. a) Culture-fair tests aim to eliminate all cultural influence, while culture-free tests do not.

Explanation: Culture-fair tests attempt to minimize cultural bias by using items and questions that are intended to be equally accessible across different cultural groups. These tests aim to assess cognitive abilities while reducing the influence of cultural background on test performance. Culture-free tests, on the other hand, attempt to provide questions and tasks that are entirely independent of any cultural influence. However, creating truly culture-free tests is practically impossible, as even seemingly neutral tasks may still be

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influenced by cultural factors. Therefore, while culture-fair tests strive to minimize cultural bias, culture-free tests aim to eliminate it completely.

39. b) Providing culture-adjusted tests to account for cultural and economic experiences
Explanation: The System of Multicultural Pluralistic Assessment (SOMPA) recognizes the importance of cultural and economic factors in intellectual assessment. Instead of aiming for culture-free tests, SOMPA provides culture-adjusted tests. These tests take into account the cultural and economic experiences of individuals from diverse backgrounds. By adjusting the tests to be culturally sensitive, SOMPA aims to create a fairer and more accurate assessment of intellectual skills across different cultural groups.

40. b) Performance factors

Explanation: Performance factors refer to various influences that can affect an individual's performance on a test. These factors include motivation, test-taking strategies, anxiety, and other situational variables that may impact how well someone performs on a particular test. Unlike test bias, which refers to systematic errors in test scores that are unrelated to the construct being measured, performance factors are more transient and can vary from one testing occasion to another.

41. c) (A) is true, but (R) is false.

Explanation: Assertion (A): Competence refers to the knowledge or skill that a person possesses. This statement is true. Competence generally refers to the knowledge, skills, and abilities that an individual has acquired through training, education, and experience.

Reason (R): Performance is the sum total of what an individual knows. This statement is false. Performance is not solely the sum total of what an individual knows; it also involves how effectively an individual can apply their knowledge and skills in real-world situations. Performance can be influenced by many factors, including motivation, context, physical condition, and emotional state.

42. b) 85-115

Explanation: The typical range for IQ scores that represents average performance on most intelligence tests is 85-115. This range is considered to encompass approximately 68% of the population, centered around the mean IQ score of 100. The standard deviation for IQ tests is usually 15 points, so scores within one standard deviation of the mean (100 ± 15) are considered average. This means that most people fall within this range, indicating typical cognitive functioning.

43. b) Adults

Explanation: The Wechsler Adult Intelligence Scale (WAIS) is specifically designed to assess the intelligence of adults. It is one of the most widely used intelligence tests for adults and is commonly employed in clinical and educational settings to evaluate various cognitive abilities, including verbal comprehension, perceptual reasoning, working memory, and processing speed. While there are Wechsler scales designed for other age groups, such as the Wechsler Intelligence Scale for Children (WISC) for children and the Wechsler Preschool and Primary Scale of Intelligence (WPPSI) for preschoolers, the WAIS is tailored for individuals aged 16 and older.

44. a) Generating many different solutions to a problem

Explanation: Divergent thinking is a cognitive process associated with creativity. It involves generating multiple, diverse solutions or ideas in response to a problem or a prompt. Individuals who engage in divergent thinking explore various possibilities, perspectives, and approaches to a given situation, rather than adhering strictly to conventional or established rules. This ability to think divergently and generate novel ideas is often considered a key component of creativity and innovation.

45. b) Creative

Explanation: Lewis Terman's study of intellectually gifted individuals, known as the Genetic Studies of Genius, found that they were not unusually creative. While the participants in Terman's study demonstrated exceptional intellectual abilities and high academic achievement, they did not exhibit significantly greater levels of creativity compared to the general population. Terman's findings suggested that intellectual giftedness and creativity are not necessarily correlated, and individuals can excel in one area without excelling in the other.

46. d) (A) is false, but (R) is true.

Explanation: Assertion (A): Psychosocial retardation is solely caused by physiological factors. This statement is false. Psychosocial retardation, which refers to delays or deficiencies in psychological and social development, is influenced by a combination of physiological, psychological, and environmental factors. While physiological factors can play a role, they are not the sole cause of psychosocial retardation.

Reason (R): Individuals raised in deprived environments may have low IQ scores due to environmental factors only. This statement is true. Environmental factors, such as socioeconomic status, access to education, nutrition, and quality of early childhood

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experiences, can significantly impact intellectual development and contribute to low IQ scores, particularly in individuals raised in deprived environments. However, it's essential to recognize that genetic factors and interactions between genes and environment also play a role in intellectual development.

47. d) Factor analysis

Explanation: Factor analysis is a statistical method used to identify underlying factors or latent variables that explain the patterns of correlations among a set of observed variables. In the context of intelligence testing, factor analysis is used to examine the interrelationships among different test items or questions to determine whether they are measuring the same underlying mental abilities or constructs. By analyzing the correlations between test items, factor analysis can reveal the presence of distinct factors representing different aspects of intelligence, such as verbal comprehension, perceptual reasoning, working memory, and processing speed. This helps researchers and test developers understand the structure of intelligence tests and ensure that the items are appropriately measuring the intended constructs.

48. c) General intelligence (g)

Explanation: Charles Spearman proposed the concept of general intelligence (g) as a fundamental factor underlying all cognitive abilities. He suggested that individuals who perform well on one type of cognitive task tend to perform well on other types as well, indicating the existence of a general factor that influences overall intellectual functioning. This general factor, termed "g," represents the common variance shared among diverse cognitive tasks. Spearman also acknowledged the existence of specific abilities (termed "s" factors) that are unique to particular tasks or domains. However, he argued that general intelligence (g) plays a central and pervasive role in shaping overall intellectual performance.

49. d) It analyzes the strategies used in problem-solving.

Explanation: Sternberg's component theory of intelligence proposes that intelligence consists of three main components: analytical intelligence, creative intelligence, and practical intelligence. Each component is associated with distinct cognitive processes and abilities. Analytical intelligence involves the ability to analyze, evaluate, and critically assess information. Creative intelligence involves the ability to generate novel ideas, solutions, and insights. Practical intelligence involves the ability to apply knowledge and skills effectively to real-world problems and situations.

50. c) (A) is true, but (R) is false.

Explanation: Assertion (A): Most individuals experience relative stability in their IQ by the time they are around 4 years old. This statement is true. Research has shown that IQ tends to exhibit stability over time, especially during early childhood. By the age of 4, children's IQ scores are relatively stable and predictive of their later cognitive functioning.

Reason (R): Research based on the Berkeley Growth Study shows that IQ correlations between ages 4 and 17 are very low. This statement is false. Research findings from the Berkeley Growth Study, as well as other longitudinal studies, have consistently shown moderate to high correlations in IQ scores from early childhood to adolescence. While there may be fluctuations in IQ scores over time for individual children, correlations between IQ scores at different ages are generally significant and indicative of stability in intellectual functioning.

51. b) It reflects the genetic and environmental conditions at a specific point in time.

Explanation: Heritability ratio is a statistic used in behavior genetics that estimates the proportion of variation in a trait within a population that is due to genetic factors. However, it's crucial to understand that heritability does not apply equally to all individuals, as it represents the proportion of variation within a specific population at a particular time that can be attributed to genetic differences. It does not directly compare different populations' intelligence but rather provides insights into the relative contributions of genetic and environmental factors to individual differences in a trait within a particular population.

52. c) It cannot be used to compare different populations.

Explanation: Biologists argue that the heritability ratio is an inappropriate tool for comparing races regarding intelligence because heritability estimates are specific to the population being studied and cannot be generalized across different populations. Heritability estimates reflect the proportion of trait variance within a particular population that is due to genetic differences, and this can vary depending on genetic and environmental factors unique to that population. Therefore, applying heritability estimates from one population to another, especially when comparing races, would be misleading and inappropriate.

53. b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

Explanation: Modern psychology recognizes that intelligence is indeed influenced by both heredity and environmental factors. Genetic factors contribute to a person's potential intelligence, while environmental factors play a crucial role in shaping how that potential is

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realized. Therefore, both Assertion (A) and Reason (R) are true in stating that intelligence is influenced by heredity and environment.

However, Reason (R) is not the correct explanation of Assertion (A). The reason is that Assertion (A) suggests that intelligence is primarily influenced by either heredity or the environment, which is an oversimplification. Modern psychology acknowledges that intelligence is influenced by both factors and their interaction, rather than being solely determined by one or the other.

54. b) Difficulty with language and cultural barriers.

Explanation: Early intelligence testing faced challenges in accurately assessing the abilities of immigrants due to language and cultural barriers. Many intelligence tests were developed in English and based on the cultural norms of the dominant group, which made them less suitable for assessing individuals from diverse linguistic and cultural backgrounds. As a result, immigrants often encountered difficulties understanding the test instructions or relating to the content of the tests, leading to inaccurate assessments of their abilities. This issue highlighted the need for culturally sensitive and language-appropriate assessment tools to ensure fair and valid evaluations of individuals from diverse backgrounds.

55. a) The tests are highly biased and unfair.

Explanation: Intelligence tests have faced criticism for their potential cultural and socioeconomic biases, which may disadvantage certain groups or individuals. Questions and tasks on these tests often reflect the experiences and knowledge more common in some cultural or socioeconomic groups than others, leading to disparities in performance that are not necessarily indicative of true intellectual ability. Consequently, using such tests as the sole basis for selection can result in unfair outcomes and reinforce existing social inequalities.

56. a) Both (A) and (R) are true and (R) is the correct explanation of (A).

Explanation: Assertion (A): The early analysis of IQ data collected by the U.S. Army during World War I overlooked the influence of language and culture on test performance. This statement is true. Early IQ tests, such as those administered during World War I, often failed to account for the influence of language and culture on test performance, leading to biased results.

Reason (R): Psychologists of that era focused on demonstrating the superiority of certain “blood” lines over others.

This statement is also true. During the early 20th century, there was a prevailing belief in eugenics and the idea of superior and inferior “bloodlines.” Psychologists of that era sometimes used intelligence tests to support these flawed ideas. The reason (R) provides the context for why the assertion (A) is true the focus on “blood” lines contributed to the oversight of the influence of language and culture on test performance.

57. c) Bushman society

Explanation: In many traditional societies, such as Bushman society, survival often depends on the ability to hunt for food and gather resources from the environment. Therefore, skills related to hunting, tracking, and understanding animal behavior are highly valued and considered essential for survival. In such societies, individuals who demonstrate proficiency in these skills are often regarded as intelligent and resourceful. While hunting skills may also be valued in other societies to some extent, such as Pacific islander societies or North American societies, they are particularly significant in societies where hunting is a primary means of obtaining food and livelihood, as is often the case in traditional hunter-gatherer societies like the Bushmen.

58. d) Multifaceted intelligence.

Explanation: This term acknowledges the complexity of intelligence, recognizing that it manifests in diverse ways across different contexts and cultures. Intelligence encompasses various abilities, such as logical reasoning, creativity, emotional intelligence, and practical problem-solving skills. Therefore, attempting to define intelligence comprehensively requires considering its multifaceted nature rather than reducing it to a single dimension or definition.

59. a) Cultural background.

Explanation: Cultural background raises questions about the definition of intelligence because it influences how adaptability and resourcefulness are expressed and valued in different environments. Intelligence has historically been defined as adaptation to the environment, and cultural factors play a significant role in this process. Different cultures may prioritize different skills and knowledge, affecting how intelligence is understood and measured. Therefore, cultural background is a key factor that complicates the definition of intelligence, especially when considering individuals’ adaptability and resourcefulness across diverse environments.

60. b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

Explanation: Assertion (A): The California court case involving black children argued

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that intelligence tests are culturally biased. This statement is true. The case, *Larry P. v. Riles* (1979), involved black children and argued that intelligence tests, particularly those used for placement in special education, were culturally biased against African American students.

Reason (R): The state of California successfully defended the unbiased nature of intelligence tests.

This statement is true. In fact, the state of California did not successfully defend the unbiased nature of intelligence tests in the *Larry P. v. Riles* case. Instead, the court ruled in favor of the plaintiffs, finding that the IQ tests used were culturally biased and ordered the state to stop using them for placing black students in special education.

So, while both assertions are true, Reason (R) does not correctly explain Assertion (A). Therefore, option b) is correct.

61. d) Lewis Terman

Explanation: Lewis Terman was responsible for the first major revision of the Binet-Simon test and the introduction of the concept of the Intelligence Quotient (IQ) to measure intelligence. Terman adapted the Binet-Simon test for use in the United States and introduced the concept of the IQ, which is calculated by dividing a person's mental age by their chronological age and multiplying the result by 100. Terman's revised version of the test became known as the Stanford-Binet Intelligence Scale, which became widely used in the assessment of intelligence.

62. c) Verbal and Performance

Explanation: The Wechsler intelligence tests, such as the Wechsler Adult Intelligence Scale (WAIS) and the Wechsler Intelligence Scale for Children (WISC), consist of two major scales that assess specific abilities:

Verbal Scale: This scale measures verbal comprehension, reasoning, and expression skills. It includes tasks such as vocabulary, similarities, and comprehension.

Performance Scale: This scale assesses non-verbal reasoning, spatial processing, and perceptual organization skills. It includes tasks such as block design, picture arrangement, and digit symbol coding.

63. c) Army General Classification Test

Explanation: During World War II, the Army General Classification Test (AGCT), also known as the Army Alpha and Army Beta tests, was widely used by the United States military for personnel selection. The AGCT was designed to assess recruits' cognitive abilities and

aptitudes to determine their suitability for various military roles. Recruits who scored poorly on the AGCT were often assigned to less complex or physically demanding roles, while those with higher scores were assigned to more skilled or technical positions. This helped ensure that individuals with lower intelligence were not placed in roles beyond their capabilities within the armed services.

64. c) Simple perceptual-physical tasks

Explanation: The original Binet-Simon test, developed by Alfred Binet and Théodore Simon in the early 20th century, was designed to assess children's intelligence. In its first part, the test included simple perceptual-physical tasks that were intended to measure basic cognitive abilities, such as sensory perception, motor coordination, and basic problem-solving skills. These tasks were aimed at assessing the child's ability to perceive and interact with their physical environment in a simple and straightforward manner. The test gradually increased in difficulty in subsequent parts to evaluate more complex cognitive abilities.

65. b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

Explanation: Assertion (A) is true because early misuses of intelligence tests were indeed associated with immigrant screening during World War I. These tests were used to assess and classify immigrants, particularly those from non-English-speaking countries, leading to discriminatory practices and biased interpretations of their intelligence.

Reason (R) is also true because one of the key issues during the early uses of intelligence tests was the ignorance or disregard of cultural interpretations and backgrounds of immigrants. This lack of consideration for cultural factors often resulted in incorrect assessments and unfair treatment of individuals from diverse backgrounds. However, Reason (R) does not directly explain Assertion (A). While cultural interpretations of immigrants were indeed ignored, it was not the sole reason for the misuses of intelligence tests during World War I.

66. b) Culture-fair test

Explanation: Culture-fair tests, also known as culture-fair or culture-fair intelligence tests, aim to minimize cultural biases and factors that might disadvantage individuals from certain cultural backgrounds. These tests attempt to assess cognitive abilities in a way that is less influenced by cultural factors such as language, socioeconomic status, and cultural knowledge. SOMPA, designed for children in the specified age range, is intended to be culturally fair, providing a more equitable assessment of cognitive abilities across different cultural backgrounds.

Answer Key

67. d) Consistency with the concept of intelligence

Explanation: Construct validity is a key aspect of validity in psychological testing that assesses the extent to which a test accurately measures the theoretical construct or concept it claims to measure. In the context of intelligence testing, construct validity examines whether the test measures intelligence as it is conceptualized in psychological theory. Therefore, construct validity in intelligence testing is concerned with ensuring that the test's scores are consistent with the theoretical understanding of intelligence. It involves demonstrating that the items on the test are aligned with the broader conceptualization of intelligence and that the test effectively captures the underlying construct of intelligence. This ensures that the test is measuring what it intends to measure and provides meaningful interpretations of individuals' intelligence.

68. c) Deficiency in adaptive behavior

Explanation: Mental retardation, now referred to as intellectual disability, is typically diagnosed based on two main criteria:

Intellectual functioning (IQ below 70): Individuals with intellectual disability typically have an IQ below 70, indicating limitations in intellectual functioning.

Deficiency in adaptive behavior: In addition to low intellectual functioning, individuals must demonstrate significant limitations in adaptive behavior, which refers to the ability to effectively function in everyday life activities. This includes skills such as communication, self-care, social interaction, and independent living.

69. c) Intra-individual variability

Explanation: Intra-individual variability refers to the variation or differences observed within the same individual across different cognitive domains or over time. In the context of intellectual ability, it refers to the phenomenon where individuals of the same age may exhibit varying levels of cognitive functioning or intellectual abilities. This variability can be influenced by various factors such as genetic differences, environmental experiences, educational opportunities, health conditions, and life experiences. It highlights the complexity of cognitive development and the diverse trajectories of intellectual growth among individuals, even within the same age group.

70. b) Inherited genetic factors

Explanation: Organic retardation is an older term that is no longer widely used in clinical settings. The preferred term is intellectual disability (ID). ID is characterized by significant limitations in both intellectual functioning (cognitive skills) and adaptive behavior (skills needed for daily life). Genetic factors are the most common cause of ID, but there can be

other causes as well, such as prenatal infections or complications during birth.

71. c) Seven.

Explanation: Louis Thurstone challenged Charles Spearman's theory of a single general intelligence (g-factor) and proposed the theory of Primary Mental Abilities. He identified seven distinct abilities that he believed represented different dimensions of human intelligence. These are:

Verbal Comprehension: Understanding verbal material and vocabulary. Word Fluency: Producing words rapidly.

Number Facility: Dealing with numbers quickly and accurately. Spatial Visualization: Visualizing and manipulating objects. Associative Memory: Memorizing and recalling information. Perceptual Speed: Quickly identifying visual details. Reasoning: Solving problems of a logical or abstract nature.

72. d) They show some relationship to each other.

Explanation: In Thurstone's theory of primary mental abilities, each ability is considered relatively independent of the others. However, Thurstone acknowledged that there might be some degree of relationship or correlation between certain abilities. When two primary abilities show modest correlations, it suggests that while they are relatively independent, there is still some degree of relationship or association between them. This means that they share some common variance or are influenced by similar underlying factors, but they are not completely dependent on each other and still represent distinct dimensions of intelligence.

73. a) The sequence of steps used in problem-solving.

Explanation: Robert Sternberg proposed a triarchic theory of intelligence, which suggests that intelligence is composed of three main components: analytical intelligence, creative intelligence, and practical intelligence.

Analytical intelligence involves the ability to analyze, evaluate, judge, compare, and contrast information. It is often associated with academic problem-solving and critical thinking skills.

Creative intelligence involves the ability to generate novel and valuable ideas, think outside the box, and approach problems in innovative ways.

Practical intelligence involves the ability to adapt to and shape the environment, solve real-world problems, and apply knowledge effectively in everyday life situations.

74. a) Both (A) and (R) are true and (R) is the correct explanation of (A).

Answer Key

Explanation: Assertion (A) is True: There is a significant body of research suggesting that IQ scores show moderate to high stability from early childhood (around age 6) onwards, extending into adulthood. This stability is attributed to a combination of genetic and early environmental influences on brain development.

Reason (R) is True and Explains (A): IQ at age 7 can be a good predictor of IQ at age 17 because it reflects the underlying cognitive abilities that are starting to solidify during this developmental period. While experiences can influence cognitive development to some extent, the core abilities measured by IQ tests tend to be relatively stable over time.

75. a) Studies of adopted children.

Explanation: Studies of adopted children provide evidence to support the role of heredity in intelligence. These studies compare the IQ scores of adopted children with those of their biological and adoptive parents. By examining the similarities between the IQ scores of adopted children and their biological parents, researchers can assess the influence of genetics on intelligence. If adopted children show greater similarity in IQ to their biological parents than to their adoptive parents, it suggests that genetic factors play a significant role in determining intelligence. This method helps to disentangle the contributions of genetic inheritance from environmental influences.

76. b) Transracial study

Explanation: Scarr and Weinberg conducted a transracial adoption study to understand the influence of foster homes on intelligence. In this study, they examined the IQ scores of adopted children who were raised in homes of a different racial or ethnic background from their biological parents. By comparing the IQ scores of these adopted children with those of their biological and adoptive parents, researchers could assess the relative contributions of genetic inheritance and environmental factors to intelligence. Transracial adoption studies are valuable for investigating the effects of environmental influences, such as foster homes, on intelligence while controlling for genetic factors. These studies help researchers understand how different environments, including foster homes, may shape cognitive development and intelligence.

77. b) To estimate the percentage of an individual's intelligence that is due to genetics.

Explanation: The main purpose of the heritability ratio in psychology is to estimate the proportion of individual differences in a trait, such as intelligence, that can be attributed to genetic factors. Heritability estimates provide insights into the extent to which genetic variation contributes to individual differences in a particular trait within a specific

population. Heritability ratios are calculated using statistical techniques applied to data from studies of relatives, such as twin studies or adoption studies. These studies help researchers partition the variance in a trait into genetic and environmental components, allowing them to estimate the relative contributions of genetics and environment to individual differences.

78. d) Heritability applies to populations and groups, not individuals.

Explanation: In the context of intelligence, it's crucial to understand that heritability applies to populations and groups, not to individual people. Heritability is a statistical concept that estimates the proportion of individual differences in a trait (such as intelligence) within a specific population that can be attributed to genetic differences. It does not indicate the degree to which an individual's intelligence is genetically determined. Heritability estimates provide insights into the relative contributions of genetic and environmental factors to individual differences in a trait within a population. However, they do not determine the degree to which an individual's intelligence is influenced by genetics.

79. c) His suggestion that average differences between races might be due to genetic factors.

Explanation: Jensen's hypothesis, particularly his suggestion that genetic factors might contribute to average differences in intelligence between racial or ethnic groups, sparked significant controversy and debate. Many critics argued that his emphasis on genetic explanations for group differences in intelligence overlooked the complex interplay of environmental, cultural, and social factors that influence cognitive development. Jensen's ideas stirred intense discussions about race, genetics, and intelligence, raising ethical and social concerns regarding the interpretation and implications of his research findings.

80. c) Developing specific criterion sampling tests.

Explanation: David McClelland proposed the use of specific criterion sampling tests as an alternative to intelligence tests for job selection. These tests assess individuals based on the specific skills and abilities required for a particular job, rather than relying solely on general intelligence measures. Criterion sampling tests focus on evaluating candidates' proficiency in job-related tasks, behaviors, and competencies that directly contribute to successful job performance.

McClelland's approach emphasizes the importance of assessing individuals based on the specific requirements of the job they are applying for, rather than relying solely on measures of general intelligence.

Answer Key

81. d) Simon Baron-Cohen

Explanation: Simon Baron-Cohen, a British clinical psychologist and professor of developmental psychopathology, introduced the concept of “theory of mind.” Theory of mind refers to the ability to attribute mental states—beliefs, intents, desires, emotions, knowledge to oneself and others and to understand that others have beliefs, desires, intentions, and perspectives that may differ from one’s own. It plays a crucial role in social interaction, communication, and understanding the behaviors of others. Baron-Cohen’s research in the field of autism spectrum disorders (ASD) led him to propose the theory of mind as a key concept for understanding social and cognitive deficits in individuals with ASD.

82. c) Howard Gardner

Explanation: Howard Gardner proposed the theory of multiple intelligences, which suggests that intelligence is not a single, fixed entity but rather consists of several distinct types of intelligences. These include linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal intelligences. This theory emphasizes the diversity of human abilities and has influenced educational practices by encouraging educators to recognize and cultivate different forms of intelligence in students.

83. d) Daniel Goleman.

Explanation: Daniel Goleman introduced the concept of emotional intelligence in his book “Emotional Intelligence: Why It Can Matter More Than IQ” published in 1995. He defined emotional intelligence as the ability to recognize, understand, manage, and express emotions effectively. Goleman’s work has had a significant impact on psychology, leadership development, and various fields emphasizing the importance of emotional skills alongside cognitive abilities for personal and professional success.

84. b) The ability to recall facts and information.

Explanation: Crystallized intelligence refers to the accumulation of knowledge, facts, and information acquired over time through learning and experience. It involves the ability to recall and utilize information stored in long-term memory. Unlike fluid intelligence, which involves reasoning and problem-solving in novel situations, crystallized intelligence reflects the application of previously acquired knowledge and skills.

85. b) Social intelligence.

Explanation: Social intelligence refers to the ability to understand and interpret the emotions, motives, and behaviors of others in social situations. It involves skills such as

empathy, emotional awareness, social perception, and effective communication. Socially intelligent individuals are adept at navigating social interactions, understanding social cues, and building and maintaining relationships. This type of intelligence is crucial for successful interpersonal relationships and effective social functioning.

86. b) Jean Piaget.

Explanation: Jean Piaget, a Swiss psychologist, introduced the concept of sensory-motor intelligence as part of his theory of cognitive development. According to Piaget, sensory-motor intelligence is the initial stage of cognitive development, occurring from birth to approximately two years of age. During this stage, infants learn about the world through their senses and motor actions. They develop basic sensorimotor skills, such as grasping, reaching, and object permanence (the understanding that objects continue to exist even when they are out of sight). Piaget's work emphasized the importance of sensory experiences and motor activities in shaping early cognitive development.

87. d) Sociocultural theory.

Explanation: Sociocultural theory, often associated with the work of Lev Vygotsky, emphasizes the importance of social interaction, cultural context, and environmental factors in shaping cognitive development and intelligence. According to this theory, cognitive development occurs through social interactions with others, cultural tools, and the transmission of knowledge and skills within a particular cultural context. Vygotsky proposed that the social and cultural environment provides the foundation for the development of higher mental functions, such as language, problem-solving, and reasoning. In contrast to theories that focus solely on genetic or innate factors, sociocultural theory highlights the dynamic interaction between individuals and their social and cultural contexts in shaping intelligence.

88. a) Analytical intelligence.

Explanation: Analytical intelligence refers to the ability to analyze, evaluate, and solve problems logically. It involves skills such as critical thinking, logical reasoning, and abstract thinking. Individuals with high analytical intelligence excel in tasks that require problem-solving, pattern recognition, and deductive reasoning. This type of intelligence is often measured by traditional IQ tests and is associated with academic achievement and success in fields that require analytical thinking, such as mathematics, science, and engineering.

89. b) Reliability.

Explanation: Reliability refers to the consistency or stability of the results obtained from

Answer Key

a test over time and across different situations. A reliable test produces consistent results when administered to the same group of individuals on different occasions or when different scorers score the test. It is an essential characteristic of a good psychological test because it ensures that the test accurately measures what it intends to measure without random errors.

90. c) Raymond Cattell.

Explanation: Raymond Cattell, a prominent psychologist, introduced the concept of fluid and crystallized intelligence. Fluid intelligence refers to the ability to reason and solve new problems independently of previously acquired knowledge. It involves skills such as logical reasoning, abstract thinking, and problem-solving in novel situations. Cattell proposed that fluid intelligence declines with age as cognitive processing speed and efficiency decrease. In contrast, crystallized intelligence, which is associated with the accumulation of knowledge and experience, tends to remain stable or even increase with age.

91. b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

Explanation: Assertion (A) is true: Sternberg's component theory of intelligence indeed focuses on the sequence of steps involved in problem-solving. This theory breaks down the mental processes into three kinds of components: metacomponents, performance components, and knowledge-acquisition components.

Reason (R) is true: Meta-components in Sternberg's theory refer to the executive processes used in problem-solving and decision-making. They are higher-order processes that plan, monitor, and evaluate the course of problem-solving, but they are not the actual steps used to reach a solution. However, (R) is not the correct explanation of (A) because while meta-components are involved in managing the problem-solving process, they do not constitute the steps themselves. The steps or procedures used to reach a solution are part of the performance components, which execute the strategies dictated by the meta-components.

92. b) Analytical, creative, and practical.

Explanation: Robert Sternberg's triarchic theory of intelligence proposes three aspects of intelligence:

Analytical intelligence involves problem-solving and the ability to analyze, evaluate, judge, and compare information.

Creative intelligence involves thinking in novel and imaginative ways, generating unique ideas, and solving problems in unconventional ways.

Practical intelligence involves the ability to apply knowledge and skills in everyday, real-world situations, adapting to environmental contexts effectively.

93. d) Speed.

Explanation: Edward L. Thorndike's multifactor theory of intelligence posits that intelligence is composed of many specific mental abilities or factors, each contributing to the overall intellectual capacity. Among the four attributes he identified level, range, area, and speed refers to the rapidity with which an individual can respond to items. This attribute is concerned with how quickly a person can process information and execute responses, which is a crucial aspect of cognitive efficiency and intelligence. The other attributes, level, range, and area, relate to different aspects of intellectual tasks and abilities.

94. d) Specific mental abilities.

Explanation: Thurstone's primary mental abilities theory focuses on the idea that intelligence is not a single, general ability (as proposed by Spearman's g-factor), but rather is composed of several distinct and specific mental abilities. Thurstone identified seven such abilities: verbal comprehension, word fluency, number facility, spatial visualization, associative memory, perceptual speed, and reasoning. Each of these abilities represents a separate facet of intelligence, challenging the notion of a singular general intelligence and emphasizing the diversity of cognitive capabilities in individuals.

95. b) Fluid intelligence.

Explanation: Raymond Cattell's theory of fluid and crystallized intelligence suggests that intelligence comprises two distinct components. Fluid intelligence represents the "nature" component, which refers to the inherent, biologically influenced aspects of intelligence. It involves the ability to reason abstractly, solve novel problems, and adapt to new situations, regardless of prior knowledge or experience. Fluid intelligence is thought to be relatively stable across the lifespan and less influenced by education and cultural factors.

96. c) Howard Gardner's multiple intelligence theory.

Explanation: Howard Gardner's multiple intelligence theory proposes that intelligence is not a single, unitary concept but rather a collection of distinct abilities or intelligences. Gardner initially identified seven types of intelligence: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal. Later, he added two more types: naturalistic intelligence and existential intelligence. These intelligences represent different ways in which individuals perceive and understand the world and can excel in various domains.

97. a) Coping with novel situations.

Answer Key

Explanation: In Robert Sternberg's triarchic theory of intelligence, creative intelligence is characterized by the ability to deal with new and unfamiliar situations. It involves the capacity to use past experiences and current skills to create novel and effective approaches to problems. Creative intelligence is demonstrated when a person encounters a unique problem and devises a new and unique solution, often involving divergent thinking and innovation. This type of intelligence is crucial for adapting to change and generating new ideas.

98. b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

Explanation: Assertion (A): Intelligence is the ability to learn from experience, solve problems, and use knowledge to adapt to new situations. This statement is true. It reflects a commonly accepted definition of intelligence that encompasses various cognitive abilities such as learning, problem-solving, and adaptation.

Reason (R): Binet defined intelligence as "Judgment or common sense, initiative, the ability to adapt oneself."

This statement is also true. Alfred Binet, a pioneering psychologist in the field of intelligence testing, indeed defined intelligence in terms of judgment, common sense, initiative, and adaptability. While both Assertion (A) and Reason (R) are true, Reason (R) doesn't directly explain or provide context for Assertion (A). They are parallel statements reflecting different perspectives on intelligence.

99. c) (A) is true, but (R) is false.

Explanation: Assertion (A) is true: Charles Spearman's two-factor theory of intelligence does propose that intellectual abilities are comprised of a general ability, known as the g-factor, and specific abilities, known as s-factors. The g-factor represents general cognitive ability that influences performance on various cognitive tasks, while s-factors are abilities specific to certain tasks or areas of functioning.

Reason (R) is false: The g-factor is not an acquired factor from the environment; rather, it is considered a general cognitive ability that influences all other cognitive abilities. Specific abilities (s-factors) are not necessarily universal inborn abilities; they can be developed through learning and experience. Therefore, while the assertion about Spearman's theory is correct, the reason provided is incorrect in its characterization of the g-factor and s-factors.

100. c) Intelligence is inherited, and it is based on superior perceptual and physical

attributes.

Explanation: Sir Francis Galton, a pioneer in the study of intelligence, held the conviction that intelligence was inherited and that certain physical and perceptual attributes were indicators of this inherited intelligence. He believed that quickness of sensory perception and other physical characteristics were evolutionarily advantageous and thus provided a good indication of general mental ability. Galton's work laid the foundation for the field of psychometrics and influenced the later development of intelligence testing. His views were shaped by his interest in eugenics and the belief that intelligence could be measured by certain inherited traits.

101. c) Assessing intelligence in a nonverbal way.

Explanation: David Wechsler's primary concern while working with patients at Bellevue Hospital was to assess intelligence beyond just verbal abilities. He emphasized that factors other than intellectual ability are involved in intelligent behavior and objected to the single score offered by the then-current Binet IQ test, which he found unsatisfactory. Wechsler's tests were created to provide a more comprehensive understanding of his patients' intelligence, taking into account both verbal and nonverbal elements.

102. a) Consistency and reproducibility.

Explanation: Reliability of a test measures how consistently a method measures something and whether it can reproduce the same results under the same conditions. If a test is reliable, it should yield the same scores across different instances when the underlying thing being measured has not changed. This is crucial for ensuring that the test results are stable and can be trusted over time. High reliability indicates that the test is free from random errors and can consistently measure the intended attribute.

103. d) Correlation with similar tests.

Explanation: Concurrent validity in intelligence testing is concerned with the extent to which the results of a test correlate with the results of other established tests that are designed to measure the same or similar constructs. It assesses whether a new test is consistent with an already validated measure. This type of validity is important when a new intelligence test is developed, as it demonstrates that the test is measuring what it claims to measure by showing that its results are similar to those of an existing, proven test. Concurrent validity is established by comparing the scores of the new test with the scores from the validated test, taken at the same time.

104. a) Both (A) and (R) are true, and the (R) is a correct explanation of (A).

Answer Key

Explanation: Assertion (A) is true: Lewis Terman, an American psychologist, is credited with introducing the concept of Intelligence Quotient (IQ) in the early 20th century. He adapted the work of Alfred Binet, who had developed the first widely used intelligence test, the Stanford-Binet Intelligence Scales.

Reason (R) is true and explains (A): Terman's adaptation involved calculating a score by dividing a person's mental age (MA), as estimated by their performance on the test, by their chronological age (CA) and multiplying by 100. This resulted in a single numerical value, the IQ score, which aimed to represent a person's overall intelligence relative to their age group (e.g., a 10-year-old performing at the level of an average 12-year-old on the test would get an IQ score of 120).

105. b) Significant impairment in cognitive and adaptive behavior

Explanation: Intellectual Disability (ID) is characterized by significant limitations both in intellectual functioning (such as learning, problem-solving, judgement) and in adaptive behavior, which covers a range of everyday social and practical skills. This condition affects an individual's ability to perform daily tasks and interact with others effectively. It is not associated with superior or average intelligence, nor is it defined by physical disabilities. Instead, ID involves challenges in mental capabilities and the skills necessary to live independently.

106. b) A high-IQ society

Explanation: Mensa is a high-IQ society that is open to individuals who score within the top 2% of the population on certain intelligence tests. Founded in 1946, Mensa aims to provide a forum for intellectual exchange and social interaction among its members who have demonstrated exceptional cognitive abilities. To join Mensa, individuals typically need to achieve a score within a specific percentile on recognized IQ tests, such as the Stanford-Binet Intelligence Scales, the Wechsler Adult Intelligence Scale (WAIS), or other approved tests.

Membership in Mensa offers opportunities for networking, engaging in stimulating discussions, and participating in various activities and events.

107. a) Genetic vs. environmental influences

Explanation: The concept of "nature vs. nurture" in intelligence pertains to the longstanding debate regarding the relative contributions of genetic factors (nature) and environmental factors (nurture) to the development of intelligence. This debate explores whether intelligence is primarily determined by innate biological factors inherited from one's parents

(nature) or shaped by external factors such as upbringing, education, and life experiences (nurture). On one hand, proponents of the “nature” side argue that genetic factors play a dominant role in determining intelligence. They suggest that individuals inherit certain genetic traits and predispositions that influence cognitive abilities, including factors like neural processing efficiency, brain structure, and neurotransmitter function.

108. d) Emotional intelligence (EQ)

Explanation: Emotional Intelligence Defined: Emotional intelligence refers to the ability to understand, use, and manage your own emotions in positive ways to achieve your goals. It also encompasses empathy, the ability to understand and respond to the emotions of others. Self-awareness: Recognizing your own emotions and how they influence your thoughts and behavior. Self-regulation: Managing your emotions in healthy ways, including delaying gratification and controlling impulses. Motivation: Using emotions to achieve your goals. Empathy: Understanding the emotions of others and taking their perspective. Social skills: Building relationships, communicating effectively, and resolving conflict.

109. a) The fear of confirming negative stereotypes about one’s group

Explanation: “Stereotype threat” refers to the phenomenon where individuals from stereotyped groups (such as racial or gender minorities) experience anxiety or concern about confirming negative stereotypes related to their group. This anxiety can impair their performance on tasks, including those related to intelligence.

For example, if a person belongs to a group that is stereotypically perceived as less intelligent, they may worry that their performance on an intelligence test will confirm this stereotype. This fear of confirming the stereotype can create additional stress and pressure, which can, in turn, negatively affect their performance. As a result, stereotype threat can lead to underperformance and contribute to the perpetuation of stereotypes.

110. d) (A) is false, but (R) is true.

Explanation: Assertion (A) is false because the Flynn effect does not suggest that people are becoming less intelligent over time. On the contrary, it indicates that IQ scores have been rising consistently across generations.

Reason (R) is true as it correctly describes the Flynn effect. It has been characterized by a long-term increase in intelligence test scores, which has been observed in numerous countries. This rise in IQ scores has been attributed to various factors, including better education, improved nutrition, more stimulating environments, and reduced exposure to toxins

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