

Questions & Answers on Chapter 1- Variations in Psychological Attributes

Section A: Very Short Answer Type-I Questions (2 Marks Each)

Word Limit: 30 words

1. **Define Individual Differences.**

Individual differences refer to the **distinctiveness and variations** among people's characteristics and behaviour patterns. It explains how and why people differ from one another.

2. **What is Situationism?**

Situationism is the view that **situations and circumstances** influence an individual's behaviour more than their internal personal traits. External factors are seen as the primary drivers of action.

3. **State the formula for calculating Intelligence Quotient (IQ).**

IQ is calculated by dividing **Mental Age (MA)** by **Chronological Age (CA)** and multiplying by 100. **Formula:** $IQ = \frac{MA}{CA} \times 100$.

4. **Define Aptitude.**

Aptitude refers to an individual's **underlying potential** for acquiring specific skills or knowledge after receiving proper training in a particular field.

5. **What is a Psychological Test?**

A **psychological test** is an **objective and standardised measure** of an individual's mental or behavioural characteristics, such as intelligence or aptitude, used for diagnosis and selection.

6. **Define Mental Age (MA).**

Mental Age is a measure of an individual's intellectual development **relative to their age group**. For example, an MA of 10 means the child performs like an average 10-year-old.

7. **What are Values?**

Values are **enduring beliefs** about an ideal mode of behaviour. They serve as standards for guiding one's own actions and for judging the behaviour of others.

8. **How is 'Interest' different from 'Aptitude'?**

Interest is a **preference** for engaging in a specific activity, while **aptitude** is the **underlying potential** to acquire a skill given the right training.

Section B: Short Answer Type-II Questions (3 Marks Each)

Word Limit: 60 words

1. **Differentiate between Formal and Informal Assessment.**

Formal assessment is objective, standardised, and organised; it is conducted by trained professionals using scientific procedures. **Informal assessment** is subjective and varies from case to case and between different assessors, making it open to personal interpretation.

2. **Briefly explain Spearman's Two-factor Theory of Intelligence.**

Spearman proposed that intelligence consists of a **general factor (g-factor)** and **specific factors (s-factors)**. The **g-factor** includes mental operations common to all performances, while **s-factors** are unique abilities (like singing or athletics) that allow excellence in specific domains.

3. **Identify three characteristics of Intellectually Gifted children.**

Gifted children show:

- **Advanced logical thinking** and questioning behaviour.
- **High speed** in processing information and superior generalisation.
- **High intrinsic motivation**, self-esteem, and independent thinking.

4. **What is Emotional Intelligence?**

Emotional Intelligence is the ability to **monitor, appraise, and regulate** one's own and others' emotions. It uses emotional information to guide thinking and actions, often expressed as an **Emotional Quotient (EQ)**.

5. **Differentiate between Psychometric and Information-Processing approaches.**

The **psychometric approach** views intelligence as a **structure or aggregate of abilities** (like a single index or IQ), while the **information-processing approach** focuses on the **cognitive processes** (how a person reasons and solves problems) underlying intelligent behaviour.

6. **What is 'Technological Intelligence'?**

Prominent in Western cultures, **technological intelligence** fosters skills like **generalisation, abstraction, speed, and mental manipulation**. It values individual achievement, analysis, and performance over social or emotional connectivity.

7. **Briefly describe the three levels of Intellectual Disability.**

Intellectual disability is categorised by IQ: **Mild** (IQ 55–70) allows independent functioning; **Moderate** (IQ 35–50) requires supervision in daily tasks; **Severe and Profound** (IQ below 35) require constant lifelong care.

8. **Mention three potential misuses of Intelligence Tests.**

Tests can attach a **stigma** to children based on low scores, lead to **discriminating practices** by parents or teachers, and may be **culture-biased**, unfairly underestimating the IQ of disadvantaged groups.

Section C: Long Answer Type-I Questions (4 Marks Each)

Word Limit: 120 words

1. **Describe the three types of intelligence proposed in Sternberg's Triarchic Theory.**

Robert Sternberg proposed three basic types of intelligence:

- **Componential (Analytical):** Involves the analysis of information to solve problems. It includes knowledge acquisition, planning (meta-components), and performance.
- **Experiential (Creative):** The ability to use past experiences creatively to solve novel problems. It is reflected in making new discoveries or inventions.
- **Contextual (Practical):** Known as "street smartness," it is the ability to deal with daily environmental demands. It involves adapting to, selecting, or modifying the environment to fit one's needs for success.

2. **Explain the interplay of Nature and Nurture in determining Intelligence.**

Psychologists agree that intelligence results from a complex interaction between **heredity (nature)** and **environment (nurture)**. Studies on twins show that identical twins reared together have a very high IQ correlation (0.90), suggesting a strong genetic base. However, environment plays a critical role; children from disadvantaged backgrounds adopted into high socio-economic families show significant IQ increases. **Heredity sets a range** of potential, but the **environment determines** where an individual falls within that range through factors like nutrition, family support, and quality schooling.

3. **Explain the relationship between Creativity and Intelligence.**

Research shows that **a certain level of intelligence is necessary for creativity**, as one needs the capacity to comprehend and retain knowledge to produce something new. However, **high intelligence does not guarantee high creativity**. Intelligence tests mostly involve **convergent thinking** (finding one right answer), whereas creativity tests involve **divergent thinking** (generating many "off-the-beaten-track" ideas). Consequently, a person may be highly intelligent but lack original ideas, or be highly creative without having an exceptionally high IQ.

4. **Describe the concept of 'Buddhi' in the Indian tradition of Intelligence.**

In the Indian tradition, intelligence is termed "**Integral Intelligence**," emphasizing connectivity with the social world. The Sanskrit word '**Buddhi**' is broader than Western definitions; it includes **cognitive competence** (knowledge and discrimination) alongside **affective and motivational components**. According to J.P. Das, 'Buddhi' encompasses **mental effort, determined action, and feelings**. It identifies four specific competencies: **Cognitive capacity** (context sensitivity), **Social competence** (respect for social order), **Emotional competence** (self-regulation), and **Entrepreneurial competence** (hard work and persistence).

Section D: Long Answer Type-II Questions (6 Marks Each)

Word Limit: 200 words

1. **Detailed Explanation of the PASS Model of Intelligence.**

Developed by Das, Naglieri, and Kirby, the **PASS Model** suggests that intellectual activity involves three interdependent functional units of the brain:

- **Arousal/Attention:** State of arousal is fundamental to behaviour as it helps in attending to stimuli. An optimal level allows focus on relevant aspects of a problem, while too much or too little interferes with processing.

- **Simultaneous and Successive Processing:** Information is integrated into the knowledge system in two ways. **Simultaneous processing** involves perceiving relations among concepts to form a meaningful pattern (e.g., solving Raven's Progressive Matrices). **Successive processing** involves remembering information serially, where one recall leads to another (e.g., learning multiplication tables).
- **Planning:** This is an essential feature of intelligence that activates after information is processed. It allows individuals to think of courses of action, implement them, and evaluate their effectiveness. If a plan fails, it is modified to suit the task. These processes operate on a knowledge base and are interactive and dynamic.

2. Discuss the conceptualisation of Intelligence in the Indian Tradition versus Western Culture.

Western Culture focuses on "**Technological Intelligence**," valuing skills like analysis, performance, speed, and achievement orientation. Intelligence is often seen as a property of the individual focusing on reasoning and judgment. Conversely, the **Indian Tradition** emphasizes "**Integral Intelligence**," viewing intelligence from a holistic perspective that integrates cognitive and non-cognitive processes. It emphasizes connectivity with the social and world environment. The Sanskrit concept of '**Buddhi**' is much broader than western intelligence, including mental effort, feelings, and opinions alongside knowledge. Four specific competencies are identified in the Indian tradition:

- **Cognitive capacity:** Sensitivity to context and understanding.
- **Social competence:** Respect for social order, elders, and the needy.
- **Emotional competence:** Self-regulation, honesty, and politeness.
- **Entrepreneurial competence:** Commitment, persistence, and hard work.

3. Elaborate on Howard Gardner's Theory of Multiple Intelligences.

Gardner argued that intelligence is not a single entity but consists of **eight independent types of intelligences** that interact to solve problems:

- **Linguistic:** Capacity to use language fluently and flexibly (e.g., poets, writers).
 - **Logical-Mathematical:** Ability to think logically, critically, and solve mathematical problems (e.g., scientists).
 - **Spatial:** Forming and transforming mental images (e.g., pilots, architects, surgeons).
 - **Musical:** Sensitivity to musical rhythms and patterns (e.g., composers).
 - **Bodily-Kinaesthetic:** Using the whole body or portions of it creatively for display or problem-solving (e.g., dancers, athletes).
 - **Interpersonal:** Understanding the motives and feelings of others to build relationships (e.g., counsellors, politicians).
 - **Intrapersonal:** Awareness of one's own internal strengths, limitations, and identity (e.g., philosophers).
 - **Naturalistic:** Recognizing features of the natural world and species of flora and fauna (e.g., botanists, hunters). According to Gardner, an individual may be exceptional in one domain while remaining average in others.
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Section E: Case-Based Questions

Case 1: Understanding Individual Differences

Passage: Rohan is known among his friends as a very outspoken and confident person. However, during a formal interview for a prestigious internship, his behavior changes significantly. He speaks very little, waits for his turn patiently, and appears submissive in front of the interview panel. While his friends think he has a "dominant" personality, his teachers believe his behavior is highly dependent on where he is and who he is with.

Questions:

1. Identify and explain the perspective that views Rohan's behavior as a result of external factors. (2 Marks)
2. Distinguish between formal and informal assessment in the context of Rohan's personality. (2 Marks)

Answers:

1. The perspective is known as **Situationism**. This view states that human behavior is influenced more by situational factors and circumstances rather than just personal traits. In Rohan's case, the powerful situational influence of the interview panel caused him to act in a submissive manner despite being generally aggressive or confident.
2. **Informal assessment** is what Rohan's friends did; it varies from case to case and is open to subjective interpretations. **Formal assessment**, which a psychologist would perform, is objective, standardised, and organised.

Case 2: The Logic of IQ

Passage: Ananya is a 10-year-old girl who was recently referred to a school counselor because she was struggling with her lessons. The counselor administered an intelligence test and found that Ananya's mental age is 7. Based on this, the counselor explained to her parents where she stands on the normal distribution curve of intelligence.

Questions:

1. Calculate Ananya's Intelligence Quotient (IQ) using the formula provided in the sources. (1 Mark)
2. Based on her IQ score, how would psychologists classify her? Refer to the IQ range table. (1 Mark)
3. Define the concept of "Mental Age" as used in this case. (2 Marks)

Answers:

1. **IQ = (Mental Age / Chronological Age) × 100**. Ananya's IQ = $(7 / 10) \times 100 = 70$.
 2. According to Table 1.1, a person with an IQ of 70 is classified as "**Borderline**".
 3. **Mental Age (MA)** is a measure of a person's intellectual development relative to people of her/his own age group. A mental age of 7 means Ananya's performance on the test equals the average performance level of a group of 7-year-olds.
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Case 3: Sternberg's Triarchic Perspective

Passage: Aman and Kabir are two brothers. Aman is a school topper who excels at analyzing complex mathematical problems and thinking critically about scientific theories. Kabir, on the other hand, is average in academics but is remarkably "street smart." He recently started a small business and successfully modified his marketing strategy to suit the local demands of his neighborhood, which led to high profits.

Questions:

1. According to Sternberg's Triarchic Theory, which type of intelligence does Aman possess? (1 Mark)
2. Which type of intelligence does Kabir display, and what does it involve? (2 Marks)
3. Name the third type of intelligence in Sternberg's theory not mentioned in the brothers' primary descriptions. (1 Mark)

Answers:

1. Aman possesses **Componential or Analytical Intelligence**.
 2. Kabir displays **Contextual or Practical Intelligence**. This involves the ability to deal with environmental demands encountered on a daily basis, often called "street smartness" or "business sense". It includes adapting to, selecting, or modifying the environment to fit one's needs.
 3. The third type is **Experiential or Creative Intelligence**.
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Case 4: Gardner's Multiple Intelligences

Passage: In a talent search program, four students were highlighted for their unique abilities:

- **Sania:** A poet who can use language fluently to express her thoughts.
- **Arjun:** A star athlete who uses his whole body flexibly and creatively.
- **Megha:** A counselor who understands the motives and feelings of her clients perfectly.
- **Sahil:** A philosopher who has a deep understanding of his own internal strengths and the meaning of life.

Questions:

1. Identify the specific types of intelligence each student possesses according to Howard Gardner. (2 Marks)
2. Gardner believes these intelligences are "independent of each other." Explain what this means. (2 Marks)

Answers:

1. The intelligences are as follows:
 - **Sania:** Linguistic Intelligence.
 - **Arjun:** Bodily-Kinaesthetic Intelligence.
 - **Megha:** Interpersonal Intelligence.

- **Sahil:** Intrapersonal Intelligence.
2. Being "independent of each other" means that if a person is high on one type of intelligence, it does not necessarily indicate that they will be high or low on other types of intelligences. However, different intelligences can interact and work together to solve a problem.
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Case 5: The PASS Model of Intelligence

Passage: Before starting her final project, Simran sits down to set her goals. She creates a study schedule, identifies the materials she will need, and decides how to tackle the difficult parts of the project. She also realizes that if her current plan fails, she will need to find another way to reach her target.

Questions:

1. Which specific process of the PASS model is Simran using in this scenario? (1 Mark)
2. Briefly explain the function of this process as described in the sources. (2 Marks)
3. Name the other two neurological systems/functional units involved in the PASS model. (1 Mark)

Answers:

1. Simran is using the **Planning** process.
 2. Planning allows us to think of possible courses of action, implement them to reach a target, and evaluate their effectiveness. It also involves modifying plans if they do not work to suit the requirements of the task.
 3. The other two systems are **Arousal/Attention** and **Simultaneous/Successive Processing**.
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