



Ready For Boards
10th & 12th Exam Prep

CHAPTER 1

Variations in Psychological Attributes

CBSE Class 12 · Psychology · Chapter 1

CBSE · Psychology · Class 12

WHAT THIS CHAPTER DOES

A Define intelligence + know the IQ formula.

B Articulate 5 major theories of intelligence + theorists.

Boards prep that builds confidence, not anxiety.

TODAY'S MISSION

Today's mission

1

Define intelligence + know the IQ formula.

2

Articulate 5 major theories of intelligence + theorists.

3

Distinguish Indian conception from Western (cognitive-only) views.

4

Score 6/7 marks on this chapter's slice.

WHY THIS MATTERS

Why this chapter matters

1

5-7 marks every CBSE board paper.

2

Foundation for all of educational psychology + workplace assessment.

3

Practical: understanding why people differ + how to nurture individual strengths.

TOPIC

A

Defining + Measuring intelligence

THEOREM · LOAD-BEARING RESULT

What is intelligence?



Intelligence is the general mental CAPACITY to (a) understand, (b) learn, (c) reason, (d) solve problems, and (e) adapt to new situations. While definitions vary, modern psychology recognises intelligence as MULTI-DIMENSIONAL rather than a single ability.

STATEMENT

Measured via IQ tests. $IQ = (\text{MENTAL AGE} / \text{CHRONOLOGICAL AGE}) \times 100$. Mental age = the age at which an average person would perform the test items the testee is solving. Modern IQ tests use 'deviation IQ' — statistical

WHY THIS MATTERS

- Quantifying intelligence allows comparison + identification of giftedness or intellectual disability
- But all measurement carries cultural + social bias, so interpret with caution.

WATCH OUT FOR

NOTE IQ formula is $MA/CA \times 100$, NOT CA/MA . Don't reverse. Average IQ = 100 means $MA = CA$. Above 100 = $MA > CA$.

WORKED EXAMPLE

IQ classification ranges

1 < 70 — Intellectually disabled (formerly 'retarded'). Requires support.

2 70-89 — Below average / borderline.

3 90-109 — Average. ~68% of people.

4 110-129 — Above average / superior.

5 130-144 — Gifted.

6 145+ — Highly gifted / genius (~0.13% of population).

TOPIC

B

Theories of intelligence — Western

TOPIC

5 major Western theories

SPEARMAN (1904) — TWO-FACTOR

Charles Spearman, working in London at the turn of the twentieth century, proposed that every mental task draws on TWO factors — a single general intelligence *g* shared across all cognitive tasks, plus a task-specific ability *s* that varies by domain (arithmetic-*s*, verbal-*s*, spatial-*s*). *g* is largely innate and unitary; *s*

THURSTONE — PRIMARY MENTAL ABILITIES (PMA)

L.L. Thurstone (1938) rejected Spearman's single-view and used factor analysis on 56 different mental tests to identify SEVEN independent Primary Mental Abilities: Verbal Comprehension, Numerical Ability, Spatial Visualisation, Perceptual Speed, Memory, Reasoning, and Word Fluency. A

GARDNER (1983) — MULTIPLE INTELLIGENCES

Howard Gardner at Harvard proposed in his 1983 book 'Frames of Mind' that human intelligence is not a single capacity but at least EIGHT independent intelligences: linguistic (writers, lawyers), logical-mathematical (scientists, programmers), spatial (architects, surgeons), musical (composers,

STERNBERG (1985) — TRIARCHIC

Robert Sternberg of Yale proposed a triarchic (three-component) theory in his 1985 book 'Beyond IQ': ANALYTICAL or componential intelligence (the IQ-test kind — breaking problems into parts, comparing, evaluating); CREATIVE or experiential intelligence (handling novelty,

TOPIC

PASS model + Indian conception

PASS MODEL (J.P. DAS)

The PASS model — Planning, Attention, Simultaneous, Successive — was developed by J.P. Das (an Indian-Canadian psychologist) and colleagues in 1994, building on Soviet psychologist A.R. Luria's neuropsychological work. Planning sets goals and selects strategies; Attention selects what to focus on amid distraction;

INDIAN CONCEPTION

The Indian conception of intelligence is INTEGRAL — combining cognitive, social, emotional, entrepreneurial, and spiritual dimensions in a single holistic framework. J.B.P. Sinha and others articulated this view, rooted in ancient buddhi concepts of the Bhagavad Gita and Upanishads. Cognitive capacity sits alongside contextual sensitivity.

EMOTIONAL INTELLIGENCE (GOLEMAN, 1995)

Daniel Goleman's 1995 book 'Emotional Intelligence: Why It Can Matter More Than IQ' popularised a five-component framework: SELF-AWARENESS (recognising your own feelings as they happen), SELF-REGULATION (managing emotional impulses constructively),

CREATIVITY (GUILFORD)

J.P. Guilford (1950) distinguished CREATIVITY from intelligence by introducing the concept of DIVERGENT THINKING — the ability to generate many varied solutions to an open-ended problem (How many uses can you list for a brick?) — versus convergent thinking, which seeks the one correct answer. High creativity

TOPIC

C

Sternberg's triarchic theory in detail

WORKED EXAMPLE

3 components of intelligence (Sternberg, 1985)

- 1** ANALYTICAL INTELLIGENCE (componential): ability to analyse, judge, evaluate, compare. Measured by traditional IQ tests. Example: solving an algebra problem.

- 2** CREATIVE INTELLIGENCE (experiential): ability to create, invent, design, generate novel solutions. Example: writing a poem, inventing a gadget.

- 3** PRACTICAL INTELLIGENCE (contextual): ability to apply knowledge in real-world settings. 'Street smarts'. Example: navigating a new city, persuading a friend.

- 4** Sternberg argues that ACADEMIC IQ (analytical) is NOT the whole picture — creative + practical are equally important for life success.

TOPIC

D

Indian conception of intelligence

THEOREM · LOAD-BEARING RESULT

Indian Conception — Integral



The INDIAN CONCEPTION of intelligence (rooted in ancient + modern Indian psychology) is INTEGRAL — it combines cognitive capacity (buddhi) with SOCIAL, EMOTIONAL, and MORAL dimensions. Intelligence is HOLISTIC, not just cognitive.

STATEMENT

5 components (per J.B.P. Sinha + others): (1) COGNITIVE CAPACITY — sensitivity to context, understanding. (2) SOCIAL COMPETENCE — respect for elders, harmony in relationships. (3) EMOTIONAL COMPETENCE —

WHY THIS MATTERS

- Western intelligence (pre-Sternberg) focused on cognitive only
- Indian conception explicitly includes social + emotional + moral dimensions — a holistic framework that modern Western theories (Sternberg, Goleman) are converging towards.

WATCH OUT FOR

NOTE Don't reduce Indian intelligence to 'Western applied locally'. It's a distinctive holistic framework that predates much of Western multi-intelligence thinking.

TOPIC

E

Emotional intelligence + Aptitude + Creativity

TOPIC

Emotional Intelligence (Goleman, 1995) — 5 components

1. SELF-AWARENESS

Self-awareness is the capacity to recognise your own emotions as they arise — naming the feeling (anger, disappointment, anxiety, joy) and noticing its bodily and mental signatures before it controls your behaviour. The neuroscientific anchor is interoception (sensing internal physiological states): the practical signal

2. SELF-REGULATION

Self-regulation is the next step after self-awareness — once you know what you feel, can you manage it constructively rather than being controlled by it? Strategies include reappraisal (re-framing a setback as a learning opportunity), distraction (shifting attention away from a trigger), and suppression (consciously

3. MOTIVATION

Motivation in Goleman's framework refers to INTRINSIC drive — the inner pull toward achievement, mastery, and contribution that is not contingent on external rewards (pay, praise, status). Intrinsically motivated people persist when rewards are removed, set higher personal standards, and recover

4. EMPATHY

Empathy is the capacity to recognise and feel WHAT another person is experiencing — distinct from sympathy (feeling FOR them). Psychologists distinguish three sub-types: cognitive empathy (accurately reading another's mental state), affective empathy (sharing their emotional state), and compassionate empathy

TOPIC

Aptitude + creativity

APTITUDE

Aptitude is the **SPECIFIC** potential to acquire a particular skill or perform well in a particular domain — musical aptitude, mechanical aptitude, scholastic aptitude, clerical aptitude. It is narrower than intelligence (which spans many domains) and is the basis of vocational testing. Indian standardised tests include the DBDA

CREATIVITY (GUILFORD)

J.P. Guilford defined **CREATIVITY** in terms of **DIVERGENT THINKING** — generating many different solutions to an open-ended problem — distinct from convergent thinking which seeks the single correct answer. The four divergent components are fluency (number of ideas), flexibility (variety of categories), originality (rarity of ideas)

GIFTEDNESS

Giftedness is defined by exceptional ability — typically an IQ score above 130 (the top 2% of the population) OR demonstrably exceptional performance in a specific domain like mathematics, music, sport, or creative arts. Gifted children often need differentiated education (acceleration, enrichment, mentorship)

INTELLECTUAL DISABILITY

Intellectual disability is diagnosed by two converging criteria per DSM-5 and the AAIDD: significantly below-average intellectual functioning (IQ below 70, the bottom 2% of the population) AND significant deficits in adaptive functioning (communication, self-care, social skills, academic achievement, work)

TOPIC

IQ measurement formula

TRAP → TRUTH

× **MISTAKE** $IQ = \text{chronological age} / \text{mental age} \times 100$.

✓ **CORRECT** $IQ = (\text{MENTAL AGE} / \text{CHRONOLOGICAL AGE}) \times 100$. MA/CA, not CA/MA. Average IQ = 100 means mental age equals chronological age. Higher IQ = mental age exceeds chronological age. NOTE: Modern psychology uses 'deviation IQ' (statistical comparison to age group), not the MA/CA ratio.

TOPIC

Single intelligence

TRAP → TRUTH

× **MISTAKE** Intelligence is one single ability.

✓ **CORRECT** Modern psychology rejects 'unitary intelligence'. Gardner identified 8-9 **MULTIPLE INTELLIGENCES** (linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, naturalist, existential). Sternberg proposed 3 components (analytical, creative, practical). Even Spearman's g-factor + specific abilities (s) acknowledges multiple aspects.

TOPIC

Aptitude vs intelligence

TRAP → TRUTH

× **MISTAKE** Aptitude and intelligence are the same.

✓ **CORRECT** INTELLIGENCE is general mental ability (problem-solving, learning, adapting). APTITUDE is a SPECIFIC potential for learning a particular skill or task (musical aptitude, mechanical aptitude, scholastic aptitude). Aptitude is narrower; specific to a domain.

TOPIC

Indian conception

TRAP → TRUTH

- × **MISTAKE** Indian conception of intelligence is just Western intelligence applied locally.
- ✓ **CORRECT** Indian conception is **DISTINCTIVELY INTEGRAL** — combines **COGNITIVE CAPACITY** (buddhi) with **SOCIAL** and **EMOTIONAL** dimensions. Includes 'understanding others', 'social skill', 'commitment'. Intelligence in Indian thought is **HOLISTIC** — not just intellectual but also emotional, spiritual, social. Western (pre-Sternberg) often treats intelligence as purely cognitive.

TOPIC

EI = high empathy

TRAP → TRUTH

× **MISTAKE** Emotional intelligence just means being empathetic.

✓ **CORRECT** Emotional Intelligence (Goleman, 1995) has FIVE COMPONENTS: (1) SELF-AWARENESS (recognising your own emotions), (2) SELF-REGULATION (managing emotions), (3) MOTIVATION (inner drive), (4) EMPATHY (recognising others' emotions), (5) SOCIAL SKILLS (relationship management). Empathy is one of five — not the whole concept.

TOPIC

g-factor obsolete

TRAP → TRUTH

× **MISTAKE** Spearman's g-factor theory is obsolete.

✓ **CORRECT** Spearman's two-factor theory (1904) — g (general) + s (specific) — remains FOUNDATIONAL in psychometrics. Modern IQ tests measure g. While multi-factor theories (Thurstone, Gardner) extend it, none have replaced g. Most academic prediction studies still find g highly predictive.

TOPPER TEMPLATE · MARK-BY-MARK

5-mark: 'Compare Spearman's two-factor theory with Gardner's multiple intelligences.'

- 1 SPEARMAN (1904) — G + S**
1 m Charles Spearman proposed TWO-FACTOR THEORY: every mental task involves a GENERAL FACTOR (g) — overall mental capacity — AND a SPECIFIC FACTOR (s) — domain-specific ability. g is INNATE; s is acquired. Modern IQ tests primarily measure g.
- 2 GARDNER (1983) — MULTIPLE INTELLIGENCES**
1.5 m Howard Gardner proposed MULTIPLE INTELLIGENCES — at least 8 distinct types: (1) LINGUISTIC (poets, writers), (2) LOGICAL-MATHEMATICAL (scientists), (3) SPATIAL (architects, pilots), (4) MUSICAL (composers), (5) BODILY-KINESTHETIC (athletes, dancers), (6) INTERPERSONAL (leaders, therapists), (7) INTRAPERSONAL (self-aware individuals), (8) NATURALIST (Darwin, botanists). Sometimes existential added. Each is INDEPENDENT — you can be high in one and low in another.
- 3 COMPARISON**
1 m FUNDAMENTAL DIFFERENCE: Spearman sees intelligence as essentially UNITARY (g dominates); Gardner sees it as PLURAL (multiple independent types). Spearman is psychometric (test-based); Gardner is observational (real-world performance). Spearman acknowledges only verbal + numerical + spatial as 'real' intelligence; Gardner expands to musical + bodily + interpersonal.
- 4 CRITIQUES + SIGNIFICANCE**
1 m Spearman is criticised for being CULTURE-BIASED (Western, urban, academic) + missing real-world abilities. Gardner is criticised for LACK OF EMPIRICAL VALIDATION — multiple intelligences aren't measurable like g is. Both remain INFLUENTIAL; Spearman dominates psychometric measurement; Gardner shapes educational practice (multiple ways of learning).
- 5 CONCLUSION**
0.5 m Neither is right or wrong absolutely. Spearman's framework works for predicting academic performance; Gardner's framework works for valuing diverse human capacities. Both have a place.

TOPPER TEMPLATE · MARK-BY-MARK

5-mark: 'Explain Sternberg's triarchic theory of intelligence.'

1 **SETUP**
1 m

Robert Sternberg (1985) proposed the TRIARCHIC THEORY of intelligence, arguing that intelligence has THREE distinct components rather than being a single ability.

2 **COMPONENT 1 —
COMPONENTIAL /
ANALYTICAL**
1 m

ANALYTICAL INTELLIGENCE (componential): the ability to analyse, judge, evaluate, compare. Measured by traditional IQ tests. Used in academic problem-solving.

3 **COMPONENT 2 —
EXPERIENTIAL / CREATIVE**
1 m

CREATIVE INTELLIGENCE (experiential): the ability to create, design, invent. Combining unrelated ideas. Adapting to new situations. Generating novel solutions.

4 **COMPONENT 3 —
CONTEXTUAL / PRACTICAL**
1 m

PRACTICAL INTELLIGENCE (contextual): the ability to apply, use, implement. Street smarts. Adapting to environment. 'Common sense'. Often unmeasured by academic tests but critical for real-world success.

5 **SIGNIFICANCE**
1 m

Sternberg's theory acknowledges that academic intelligence (analytical) is NOT the whole picture — creative + practical intelligences are equally important for life success. Provides a 3-D framework for understanding human ability. Has been influential in education + workplace assessment.

TOPPER TEMPLATE · MARK-BY-MARK

5-mark: 'Discuss the Indian conception of intelligence.'

1 DEFINE + INTEGRAL CHARACTER

1 m

The INDIAN CONCEPTION of intelligence (rooted in ancient + modern Indian thought) is INTEGRAL — it combines COGNITIVE CAPACITY (buddhi) with SOCIAL and EMOTIONAL dimensions. Unlike Western (pre-Sternberg) views that focus on cognitive abilities alone, Indian thought sees intelligence as HOLISTIC.

2 5 COMPONENTS

2 m

Indian intelligence has 5 components (per J.B.P. Sinha + others): (1) COGNITIVE CAPACITY (sensitivity to context, understanding, problem-solving) — closest to Western intelligence. (2) SOCIAL COMPETENCE (respect for elders, harmony in relationships, navigating social hierarchies). (3) EMOTIONAL COMPETENCE (self-regulation, empathy). (4) ENTREPRENEURIAL COMPETENCE (commitment, persistence, ability to act). (5) MORAL or SPIRITUAL competence (wisdom, dharma — doing what's right).

3 DISTINCTION FROM WESTERN

1 m

Western intelligence (pre-Sternberg) focused on COGNITIVE only. Indian conception explicitly includes SOCIAL + EMOTIONAL + MORAL dimensions. This is DISTINCTIVE — and increasingly validated by modern Western theories (Sternberg's practical intelligence, Goleman's emotional intelligence, multiple intelligences).

4 SIGNIFICANCE

1 m

The Indian view provides a HOLISTIC framework that captures human capacity more fully. Modern Indian sociologists + educators advocate for integrating this framework into education — measuring not just academic ability but also social-emotional-moral capacities. Indian conception predates much of Western multi-intelligence thinking.

PYQ PATTERNS








Top PYQ patterns to drill

#1	Compare Spearman's g-factor with Gardner's multiple intelligences. (5 marks)	Annual
#2	Explain Sternberg's triarchic theory of intelligence. (5 marks)	2018, 2020, 2022, 2024
#3	What is the Indian conception of intelligence? Distinguish from Western. (5 marks)	Most years
#4	How is IQ calculated? Explain its classification. (3 marks)	Annual
#5	Define emotional intelligence. State its 5 components (Goleman). (3 marks)	2019, 2022, 2023

MARKS DISTRIBUTION

10-year marks distribution

10-YEAR PYQ MARKS DISTRIBUTION

Theories of intelligence (compare 2-3)		32%
Definition + measurement of intelligence (IQ)		22%
Multiple intelligences (Gardner)		18%
Triarchic theory (Sternberg)		16%
Indian conception of intelligence		14%
Emotional intelligence (Goleman)		14%
Aptitude + creativity testing		12%

RECAP · MEMORISE THESE

Recap

1 IQ — $IQ = (MA/CA) \times 100$. Average = 100.
Classification: <70 disabled / 90-109 average / 130+ gifted.

2 Theories — Spearman (g + s) · Thurstone (PMA-7) · Gardner (MI-8) · Sternberg (triarchic-3) · PASS (4) · Indian (integral-5).

3 Modern — Emotional intelligence (Goleman 5 components). Creativity (Guilford divergent thinking). Aptitude = domain-specific potential.

WHAT'S NEXT

What's next



- Chapter 2 — Self and Personality.
- Sit the 15-MCQ Quick Drill.
- Then the full Board-Pattern Paper — 25 marks.



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IQ + theories + Indian conception — now prove it.

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