

Intelligence

EXERCISES [PAGE 22]

Exercises | Q Q.1. 1 | Page 22

Choose the correct option and complete the following statement:

_____ has given formula of I.Q.

1. Binet
2. **Stern**
3. Wechsler

Solution: Stern has given formula of I.Q.

Exercises | Q Q.1. 2 | Page 22

Choose the correct option and complete the following statement:

_____ has given the concepts of fluid intelligence and crystallized intelligence.

1. **Cattell**
2. Thorndike
3. Salovey

Solution: Cattell has given the concepts of fluid intelligence and crystallized intelligence.

Exercises | Q Q.1. 3 | Page 22

Choose the correct option and complete the following statement:

_____ is an individual test of intelligence.

1. Army Alpha Test
2. Army Beta Test
3. **Block Building Test**

Solution: Block Building Test is an individual test of intelligence.

Exercises | Q Q.2. (1) | Page 22

State whether the following statement is true or false :

Verbal tests of intelligence can be given easily to illiterate people.

1. True



2. False

Solution: This statement is **False**.

Exercises | Q Q.2. (2) | Page 22

State whether the following statement is true or false :

It is possible to increase emotional intelligence.

1. True

2. False

Solution: This statement is **True**.

Exercises | Q Q.2. (3) | Page 22

State whether the following statement is true or false :

There are certain limitations to Artificial Intelligence.

1. True

2. False

Solution: This statement is **True**.

Exercises | Q Q.2. (4) | Page 22

State whether the following statement is true or false :

Group tests of intelligence are less expensive.

1. True

2. False

Solution: This statement is **True**.

Exercises | Q Q.3. (1) | Page 22

Answer the following in one sentence:

What is meant by intelligence?

Solution: David Wechsler defines intelligence as, "the aggregate or global capacity of an individual to act purposefully, to think rationally and to deal effectively with his environment."

Exercises | Q Q.3. (2) | Page 22

Answer the following in one sentence:

Who is considered as the father of intelligence test?

Solution: Alfred Binet is considered as the father of intelligence test.

Exercises | Q Q.3. (3) | Page 22

Answer the following in one sentence:

What is meant by verbal tests of intelligence?

Solution: Verbal tests of intelligence make use of words and numbers to measure intelligence and subjects respond verbally to the test items, e.g., WAIS, Army Alpha Test, etc.

Exercises | Q Q.3. (4) | Page 22

Answer the following in one sentence:

What is meant by individual test of intelligence?

Solution: Intelligence tests that can be administered to a single individual at a time are called individual tests of intelligence.

Exercises | Q Q.4. (1) | Page 22

Define the following concept:

Mental age

Solution: Mental age can be defined as the age at which an individual performs successfully on all items of the test prepared for that age.

Exercises | Q Q.4. (2) | Page 22

Define the following concept:

Social intelligence

Solution: E.L. Thorndike proposed the term Social Intelligence. Howard Gardner included 'interpersonal intelligence' in the Multiple Intelligences Theory. According to Karl Albrecht, 'Social intelligence is the ability to get along well with others and to get them to cooperate with oneself.' A continued pattern of nourishing behaviour indicates a high level of social intelligence. Such persons are skilled at interacting with and understanding people around them. They respect and encourage others. They effectively comprehend social dynamics.

Exercises | Q Q.4. (3) | Page 22

Define the following concept:

Emotional intelligence

Solution: John Mayer and Peter Salovey defined Emotional Intelligence as the 'Ability to perceive and monitor one's own and others emotions, to discriminate among them and to use this information to guide one's thinking and action'.

Exercises | Q Q.5. (1) | Page 22

Write short notes on the following :

Intelligence Quotient

Solution: 1. The concept of Intelligence Quotient (I.Q.) was introduced by German psychologist William Stern in 1912.

2. Stern computed I.Q. as a ratio of Mental Age (M.A.) to Chronological Age (C.A.). This formula is given as:

$$(I. Q.) = \frac{\text{Mental Age (M. A.)}}{\text{Chronological Age (C.A.)}}$$

3. Later, Terman refined the formula of I.Q. by multiplying the ratio of M.A. and C.A. by 100. This formula is given as:

$$(I. Q.) = \frac{\text{Mental Age (M. A.)}}{\text{Chronological Age (C.A.)}} \times 100$$

Exercises | Q Q.5. (2) | Page 22

Write short notes on the following :

Charles Spearman's theory of intelligence

Solution: Intelligence is the highest attribute of human beings. Different psychologists have defined intelligence differently.

Lewis Terman explains intelligence as, "an ability to think on an abstract level." David Wechsler defines intelligence as, "the aggregate or global capacity of an individual to act purposefully, to think rationally and to deal effectively with his environment." In 1927, Charles Spearman with the help of a statistical method called factor analysis separated

and identified two different factors of intelligence viz. General factor (g) and Specific factor (s).

(i) The general factor is the minimum competence required to carry out daily work.

(ii) Specific factor includes abilities which are required to solve problems in specific areas.

Exercises | Q Q.5. (3) | Page 22

Write short notes on the following :

Verbal tests of intelligence.

Solution:

1. Verbal tests of intelligence use language (words or numbers) for measuring intelligence. In these tests, subjects are required to respond verbally to test items.
2. E.g. Army Alpha Test, Wechsler's Adult Intelligence Scale (WAIS).
3. Verbal tests are useful to measure higher mental abilities. These tests are also useful to differentiate between people having average intelligence and those having above-average intelligence.
4. Verbal tests cannot be given to people having different linguistic backgrounds, illiterate people, and small children. Further, these tests are culture-bound and so, cannot be used in different cultures.

Exercises | Q Q.5. (4) | Page 22

Write short notes on the following :

Non-verbal tests of intelligence

Solution: Intelligence is the highest attribute of human beings. Different psychologists have defined intelligence differently.

Lewis Terman explains intelligence as, "an ability to think on an abstract level."

David Wechsler defines intelligence as, "the aggregate or global capacity of an individual to act purposefully, to think rationally and to deal effectively with his environment."

On the basis of material used in the tests, intelligence tests can be classified as Verbal tests and Non-verbal tests of intelligence.

Intelligence tests that use pictures, designs, material objects, etc., to measure intelligence are called non-verbal tests of intelligence. In these tests, language is not used to measure intelligence. In these tests, subjects are not required to respond verbally to test items. Non-verbal tests are of two types viz. (i) Performance tests for e.g., Koh's Block Design test, Dr. Bhatia's Non Verbal test, Alexander's Pass-along test, etc. and (ii) Paper-pencil tests for e.g., Raven's Standard Progressive Matrices.



Exercises | Q Q.5. (5) | Page 22

Write short notes on the following :

Artificial Intelligence

Solution:

1. Artificial Intelligence is an innovation created by human intelligence.
2. Artificial Intelligence refers to enabling machines or software programmes running those machines to think and learn through experience, just like human beings.
3. It is a field of study that combines computer science, algorithms, languages, philosophy and psychology.
4. Today, Artificial Intelligence is used on a large scale to perform various daily routine tasks as well as to solve various critical problems.
5. e.g. It is used for speech recognition, natural language processing, spam filtering from emails, medical diagnosing, detecting frauds in economic transactions, weather forecasting, etc.
6. There are certain limitations to Artificial Intelligence. It can take decisions only on the basis of stored information.
7. Hence, Artificial Intelligence cannot be an option for human intelligence in a real sense.

Exercises | Q Q.6. (1) | Page 22

Answer the following question with the help of the given points :

Write in brief about individual tests of intelligence

- i. Meaning
- ii. Advantages
- iii. Disadvantages

Solution: Meaning:

Intelligence tests that can be administered to a single person at a time are called individual tests of intelligence, for e.g., Stanford Binet Scales, Koh's Block Design Test, etc.

Advantages:

- a. The test administrator can establish a rapport with the client.
- b. The test administrator can get additional information about the client's feelings, moods, and expressions during testing.
- c. Individual tests are more capable of measuring creative thinking, compared to group tests.

Disadvantages:

- a. Individual tests are time-consuming and costly to administer.



- b. Individual tests require a trained and skillful examiner to administer, score, and interpret them.
- c. These tests cannot be used for mass testing.

Exercises | Q Q.6. (2) | Page 22

Answer the following question with the help of the given points :

Write in brief about group tests of intelligence

- i. Meaning
- ii. Advantages
- iii. Disadvantages

Solution: Meaning:

Group tests of intelligence are tests that can be administered to more than one person at a time, i.e., for mass testing, for e.g., Army Alpha and Army Beta Test, OTIS self administering tests, etc.

Advantages:

- a. Group tests are less time consuming and more economical to administer.
- b. In administering group tests, the role of the examiner is minimal. So, he/she need not go through any specialised training.
- c. These tests can be used in cases where mass testing is needed.

Disadvantages:

- a. The test administrator has much less opportunity to establish rapport, obtain cooperation, and maintain the interest of the clients.
- b. Compared to individual tests, group tests are less capable of measuring the creative aspect of intelligence.

Exercises | Q Q.7. (1) | Page 22

Answer the following question in detail:

Write in detail about the history of intelligence testing.

Solution:

1. Paul Broca and Sir Francis Galton were among the first scientists to think about measuring intelligence.
2. In the mid-1880s, Sir Francis Galton administered a battery of tests measuring variables such as head size, reaction time, visual accuracy, auditory threshold, breathing capacity, etc. He assumed that the larger the skull, the smarter the person. His test did not prove very useful.
3. During the early 1890s, Raymond Cattell used the term 'mental test' for the first time. He expanded Sir Francis Galton's ideas by emphasising that test administration must be standardised so that results are comparable.



4. In 1905, Alfred Binet published the first scale of intelligence in collaboration with Theodore Simon. The Binet-Simon Intelligence Scale consists of several components such as logical reasoning, finding rhyming words, and naming objects. This scale was revised in 1908 and 1911.
5. In 1916, Lewis Terman from Stanford University revised the Binet-Simon Intelligence Scale. He established new age norms and extended the upper age limit of the scale. This revised test was known as the Stanford Binet Test. It was revised in 1937, 1960, 1972, 1986, and 2004.
6. In 1917, Robert Yerks with his colleagues prepared Army Alpha and Army Beta intelligence tests which were used while recruiting soldiers in the army.
7. In 1939, the Army General Classification Test was used on a large scale while recruiting soldiers in the army during the Second World War.
8. In 1939, David Wechsler published the Wechsler-Bellevue Intelligence Scale. It was revised in 1955 and renamed the Wechsler Adult Intelligence Scale (WAIS). The fourth edition of this test (WAIS-IV) was released in 2008 by Karl Pearson. Wechsler also developed the Wechsler Intelligence Scale for Children (WISC).
9. Besides these tests, many other psychologists have developed various intelligence tests.

Exercises | Q Q.7. (2) | Page 22

Answer the following question in detail:

'Intelligence testing has a wide usage in various areas'. Justify with examples.

Solution: David Wechsler defines intelligence as, 'the aggregate or global capacity of an individual to act purposefully, to think rationally, and to deal effectively with his environment.'

Types of Intelligence Tests

1. Individual tests of intelligence - Individual tests of intelligence are tests that can be administered to a single person at a time, for e.g., Stanford Binet Scales, WAIS, Koh's Block Design Test, etc.
2. Group tests of intelligence - Group tests of intelligence are tests that can be administered to more than one person at a time, i.e., for mass testing, for e.g., Army Alpha and Army Beta Test, OTIS self-administrating tests, etc.
3. Verbal tests of intelligence - Verbal tests of intelligence make use of words and numbers to measure intelligence and subjects respond verbally to the test items, for e.g., WAIS, Army Alpha Test, etc.
4. Non-verbal tests of intelligence -
Non-verbal tests of intelligence do not use language to measure intelligence. They make use of pictures, designs, objects, etc. Such tests may be (i) Performance tests, e.g., Koh's Block Design Test or (ii) Paper-pencil test e.g., Raven's Standard Progressive Matrices.

Application of Intelligence Testing



1. Effective Schooling - On the basis of intelligence test scores, teachers can classify students into intellectual categories and devise special instructional programmes suited to their mental development.
2. Aids Mental Health Personnel - Intelligence tests are helpful to Mental Health personnel such as psychologists, etc., for diagnosis purposes and therapy.
3. Effective Parenting- Parents can provide appropriate educational facilities to their children based on their IQ scores.
4. Career Counselling- Scores obtained on intelligence tests help the student to select the right educational options/ courses.
5. Vocational Counselling-Individuals can choose a suitable career and achieve job satisfaction when they make a realistic choice of vocation based on IQ scores.

Exercises | Q Q.7. (3) | Page 22

Answer the following question in detail:

Explain the characteristics of people having high social intelligence.

Solution:

1. People having high social intelligence are good at understanding and interacting with others.
2. They have the ability to monitor their verbal and non-verbal expressions while communicating.
3. They are good speakers and active listeners.
4. They are skilled at assessing the emotions, motivations, desires, and intentions of others.
5. They have a good understanding of social dynamics. vi. They are flexible in their approach while dealing with others.
6. They are goal-oriented, persistent, and self-confident.
7. They can effectively resolve conflicts in a social context.
8. They are successful negotiators.
9. They enhance personal and professional relationships with others.

