

# **Psychology : A Scientific Discipline**

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## **EXERCISES [PAGE 11]**

### **Exercises | Q Q.1. (1) | Page 11**

**Choose the correct option and complete the following statement:**

Till 1879, psychology was a branch of \_\_\_\_\_.

1. physics
2. **philosophy**
3. physiology

**Solution:** Till 1879, psychology was a branch of **philosophy**.

### **Exercises | Q Q.1. (2) | Page 11**

**Choose the correct option and complete the following statement:**

Psychology is a \_\_\_\_\_ science.

1. natural
2. **social**
3. biological

**Solution:** Psychology is a **social** science.

### **Exercises | Q Q.1. (3) | Page 11**

**Choose the correct option and complete the following statement:**

\_\_\_\_\_ is considered as founder of Psychoanalysis.

1. Wilhelm Wundt
2. Carl Rogers
3. **Sigmund Freud**

**Solution:** **Sigmund Freud** is considered as founder of Psychoanalysis.

### **Exercises | Q Q.2. | Page 11**

**Match the Pairs :**

<b>Group 'A'</b>	<b>Group 'B'</b>
1. Structuralism	a. John Watson
2. Functionalism	b. Carl Rogers
3. Behaviourism	c. Ulric Neisser
4. Cognitivism	d. William James

	e. Wilhelm Wundt
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**Solution:**

Group 'A'	Group 'B'
1. Structuralism	e. Wilhelm Wundt
2. Functionalism	d. William James
3. Behaviourism	a. John Watson
4. Cognitivism	c. Ulric Neisser

**Exercises | Q Q.3. (1) | Page 11**

**State whether the following statement is true or false :**

Psychology is a study of mental processes.

1. True
2. False

**Solution:** This statement is **True**.

**Exercises | Q Q.3. (2) | Page 11**

**State whether the following statement is true or false :**

Case study method is quite often used by clinical psychologists.

1. True
2. False

**Solution:** This statement is **True**.

**Exercises | Q Q.3. (3) | Page 11**

**State whether the following statement is true or false :**

An experimenter is a person on whom the experiment is conducted.

1. True
2. False

**Solution:** This statement is **False**.

**Exercises | Q Q.4. (1) | Page 11**

**Answer the following in one sentence:**

In which year was the first psychology laboratory established?

**Solution:** The first psychology laboratory was established in 1879 by Wilhelm Wundt, at the University of Leipzig in Germany.

**Exercises | Q Q.4. (2) | Page 11**

**Answer the following in one sentence:**

Who is considered as the 'Father of American Psychology'?

**Solution:** William James is considered the 'Father of American Psychology'

**Exercises | Q Q.4. (3) | Page 11**

**Answer the following in one sentence:**

What is meant by an experimenter?

**Solution:** The person who conducts the experiment is called the experimenter.

**Exercises | Q Q.5. (1) | Page 11**

**Define the following concepts :**

Replicability

**Solution:** Replicability is the possibility to repeat research or its findings in order to test its validity.

**Exercises | Q Q.5. (2) | Page 11**

**Define the following concepts :**

Correlation coefficient

**Solution:** The correlation coefficient is the measurement of the correlation between two or more variables. Its value extends between -1.00 to +1.00. The concept was first introduced by Sir Francis Galton. The Pearson product-moment correlation coefficient is the most commonly used type of correlation coefficient.

**Exercises | Q Q.6. (1) | Page 11**

**Write short notes on the following :**

Observation method

**Solution:** The observation method is a research method that is employed in conditions where experiments may not be possible or even necessary. Observation is used by child psychologists and social psychologists. It may be carried out in a natural setting, e.g., observing candidates waiting for their turn for an interview. It may also be carried out in controlled conditions.

**The following factors should be kept in mind while carrying out the observation -**

1. It should be done systematically.
2. A comprehensive list of behaviours to be observed must be prepared.
3. The persons should not be aware of being observed.

**The disadvantages of observation are:**

1. It is a time-consuming method.
2. Objectivity is difficult to maintain during observation.
3. It is difficult to establish cause-effect relationships.

### Exercises | Q Q.6. (2) | Page 11

**Write short notes on the following :**

Survey method

**Solution:**

1. A survey is defined as a research method used for collecting data from a pre-defined group of respondents (sample) so as to gain information and insights on various topics of interest such as political opinions, consumers' preferences, etc.
2. The survey method collects the required information with the help of questionnaires, checklists, rating scales, inventories, and interviews.
3. Surveys can be undertaken using email, telephonic calls, or direct interaction with respondents.
4. The survey method is an economic and efficient method of data collection.
5. It is largely used by social psychologists, educational psychologists, and industrial psychologists.

### Exercises | Q Q.6. (3) | Page 11

**Write short notes on the following :**

Case study method

**Solution:** The case study method is a qualitative research method employed by clinical psychologists. It provides intensive, descriptive information about an individual from multiple sources such as family, peers, school, academic and health records, etc. This helps to assess the person's level of psychological and social functioning. Researchers may employ techniques like observation, interviews, psychological tests, etc.

Psychologists such as Sigmund Freud and Jean Piaget made extensive use of the case study method. However, this method is very time consuming and subjective.

### Exercises | Q Q.6. (4) | Page 11

**Write short notes on the following :**

Importance of rationality

1. **Solution:** Stanovich and his colleagues stated that rationality involves adaptive reasoning, good judgment, and good decision making.
2. According to Dr. Albert Ellis, rationality as a personal philosophy helps an individual to attain many goals in life and to be happy.
3. Rationality also ensures that a person does not compromise on social norms, values, and ethics for the sake of his own happiness.

4. A rational person's emotions, thoughts, and acts do not get driven by irrational influences.
5. In short, rationality contributes to the psychological well-being of a person and thereby, improves the quality of life.

### Exercises | Q Q.7. (1) | Page 11

**Answer the following question in detail:**

Write detailed information of the experimental method in psychology.

- **Solution:** The experimental method is one of the scientific methods to study behaviour.
- In the experimental method, experimenter conducts experiments on participants by following certain steps. These steps are:
  - a. Identifying problem
  - b. Developing a hypothesis
  - c. Selecting an experimental design and standardising the experimental procedure
  - d. Conducting an experiment and collecting data
  - e. Analysing data
  - f. Drawing conclusions
- Some of the important features of the experimental method are as follows:
  - a. It is one of the most objective methods of collecting data.
  - b. It facilitates accurate observations under controlled conditions.
  - c. It helps in finding out the cause and effect relationship between two or more variables.
  - d. The findings of the experimental method are verifiable.
- The experimental method has assigned the status of science to Psychology.

### Exercises | Q Q.7. (2) | Page 11

**Answer the following question in detail:**

Explain some of the challenges in establishing psychology as a science.

**Solution:** Many criticisms of psychology as a science have been made on practical, philosophical, and ethical grounds. The challenges in establishing psychology as science are:

1. **It is in a preparadigmatic state** - According to American philosopher, Thomas Kuhn, psychology is still in a preparadigmatic state as it has not succeeded in producing a cumulative body of knowledge that has a clear conceptual core.
2. **Issues related to objectivity and validity** - Methods used in psychology such as introspection, surveys, and questionnaires are subjective. Due to this, psychology lacks two criteria of science, i.e., objectivity and validity.
3. **Issues related to predictability and replicability** - In psychology, it is difficult to make exact predictions as people respond differently in different situations. Test results are more varied and hence difficult to replicate.
4. **Objectifying humans** - According to some psychologists, subjecting human behaviour to experimentation amounts to objectifying individuals.

### Exercises | Q Q.7. (3) | Page 11

Answer the following question in detail:

Explain some of the characteristics of a rational individual.

**Solution:**

1. **Understanding self-interest and social interest:** Rational people understand what helps them to grow and promote themselves. They take the responsibility of making choices that enable them to grow. Additionally, rational people take care of not violating other person's rights while achieving their own interests. They consider the interests of society in which they live along with their self-interests.
2. **Self-direction:** Rational people assume primary responsibility for their own lives. They do not demand or need excessive support or nurturance from others.
3. **Tolerance:** Rational people are highly tolerant, i.e. they respect individual differences between people. They also accept one's own and others' right to be wrong, i.e. they accept the fact that human beings can make mistakes.
4. **Self-acceptance and self-responsibility:** Rational people accept themselves unconditionally with all their strengths and flaws. They also accept responsibility for their own thoughts, beliefs, feelings, and behaviour.

### Exercises | Q Q.7. (4) | Page 11

Answer the following question in detail:

Explain the types of correlation.

**Solution:**

Type	Meaning	Value of correlation coefficient	Example
<b>Positive</b>	Both variables either increase or decrease at the same time.	Between 0.00 and +1.00	Higher the amount of practice, the greater the chances of success. So, practice and success are positively correlated.
<b>Negative</b>	An increase in one variable is associated with a decrease in the other and vice versa.	Between 0.00 to -1.00	The higher the expenses, the lower the amount of savings. So, expenses and the amount of savings are negatively correlated.
<b>Zero</b>	Here, any change in one variable brings no significant change in other variables.	Zero	The level of income is not related to relations with neighbours. So, income level and relation with neighbours are not correlated.

## **Exercises | Q Q.7. (5) | Page 11**

**Answer the following question in detail:**

Explain the key features of science.

**Solution:** The word science is derived from the Latin word 'Scientia' which means 'knowledge'. Science is the pursuit and application of knowledge and understanding of the natural and social world, following a systematic methodology based on evidence.

**The key features of science are:**

1. **Empirical evidence** - It refers to acquiring information through direct observation or experiments. Scientific knowledge is based on verifiable evidence.
2. **Objectivity** - This refers to the ability to observe and accept facts as they exist, setting aside all sources of expectations, values, prejudices, etc.
3. **Scientific causality** - Science aims to establish a cause-effect relationship between the variables under consideration, i.e., the effect of the Independent Variable on the Dependent Variable.
4. **Systematic exploration** - Science adopts a sequential procedure for studying various phenomena. It includes scientific steps like formulating a hypothesis, collection of facts, scientific generalisation, etc.
5. **Replication** - Scientific knowledge can be replicated under the same circumstances as the original experiment. This ensures the reliability of results towards establishing a scientific theory.
6. **Predictability** - Science involves describing and explaining phenomena as well as to make predictions accordingly.

## **Exercises | Q Q.8. (1) | Page 11**

**How Rational Am I?**

Identify the strongest and the weakest characteristics in you from those explained by Dr. Albert Ellis.

**Solution:**

1. The strongest characteristic in me is tolerance. I understand that all people are different. So, I respect others' opinions even when it is completely different than mine. I never impose my feelings, thoughts, or beliefs on anyone and always have the willingness to understand others' points of view. I don't judge others as being 'wrong' just because their ways of thinking and behaving are different than my ideologies.
2. The weakest characteristic in me is excessive dependence on my family and close friends. I believe that sometimes I depend on them for love and support a little more than I should. Hence, I feel I need to be more self-reliant in order to grow as a person.

## **Exercises | Q Q.8. (2) | Page 11**

### **How Rational Am I?**

How will you work on your weakest characteristic? Write two strategies.

**Solution: Two strategies that I can use to improve the flexibility in my life is :**

1. Adopt an unbiased perspective and non-judgmental thinking
2. Practicing meditation and mindfulness.