

# **BA (Hons) PSYCHOLOGY**

**BPCC 103: Psychology of Individual Differences**

**Guidelines for Practical**  
(2 Credits)



**School of Social Sciences**  
**Indira Gandhi National Open University**



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## 1.0 INTRODUCTION TO PRACTICAL IN PSYCHOLOGY

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Practical is a major component of any psychology course, be it at the graduation or post-graduation level. Practical is conducted in the laboratory set up and hence psychology lab is an important part of any psychology department. In practical, you will learn about various psychological tests and experiments.

We all are familiar with the term testing. We grow up taking various tests at our school, tests for our physical fitness, or tests for our selection in sport teams or tests for recruitment, and admission etc. You also must have attempted tests in some magazine, newspaper or online, which rates you on friendship – how friendly you are to others or an interest test – what do you want to do in leisure time or what do you want to be in life, or how active you are in taking initiatives etc. One very common example of test is appearing for examination in school. This type of test is called achievement test. In achievement test previous learning or what has been learnt is measured. This is only one type of various tests under the umbrella of testing. When we talk about psychological testing, there are tests related to intelligence, personality, attitude, creativity, learning, and memory etc.

Now let us know in brief about what is psychological testing and the characteristics of testing and various types of tests in the following sections. This will help you understand better how psychological tests are to be used.

### Psychological Testing

As you have already learned, psychology is a science of human behaviour. It aims at understanding various phenomena of human mind and behaviour. The purpose of understanding is description, explanation, prediction and control of behaviour and the application of various techniques for the betterment of life. But how these goals are achieved? These goals are achieved through scientific research as a first step and then the research results are applied in real life settings. Psychologists have developed certain methods and procedures over the years to understand behaviour. These methods are studied in the branches of psychology especially devoted to the experiments, methods and research in psychology. The first such branch is Psychometrics which literally means measurement of psychological variables. It includes everything related to the measurement of psychological constructs. The more specific branches are Experimental Psychology and Psychological Testing. Experimental psychology, as the name suggests, is focused more on experimentation in psychology. Psychological testing is more focused on psychological tests developed to study various mental abilities, personality traits, and other related aspects of behaviours. Psychological tests are scientifically designed instruments for psychological measurement of constructs.

Psychological tests include assessment of some mental process, trait or characteristic. They are administered to find out the cognitive, affective and behavioural functioning of the individuals. Experiments in psychology, on the other hand, make use of different instruments/apparatus to study different cognitive, affective or behavioural aspects such as sensation, perception, attention, memory, learning and other such processes. They mainly focus on studying the cause and effect relationship between independent and dependent variable. The participant has to be active during the experiment as she/he not only performs on a task but is also vigilant in observing one's own mental activities while performing the task and reporting it to the experimenter. This is called the 'introspective report' given by the participant.

In general terms, test is any procedure used to measure a factor or assess some ability. More specifically, a psychological test can be defined as ‘a standardized instrument designed to measure objectively one or more aspects of a total personality by means of samples of verbal or nonverbal responses, or by means of other behaviours’ (Freeman, 1965: 46).

Thus, a psychological test is characterized by the following:

- It is a standardized instrument.
- Objectivity is one of the characteristics of a standardized instrument.
- Measures one or many psychological attributes – mental ability, personality, interest, attitude, aptitude, etc.
- Measurement is done through verbal or non-verbal responses.
- Sample of behaviour may be observed or studied through psychological tests.
- The test results are given in terms of scores or categories.

A good psychological test is always a standardized test, which means that the test follows a uniform and systematic procedure of administration and scoring. The main characteristics of a good test are that it should be reliable, valid, possess good norms and should be appropriate for the persons’s age, cultural, linguistic and social background. The standardized test has a manual in which the reliability, validity and the norms are provided.

#### *A brief overview of the early developments in testing*

Psychological testing is believed to have started with the work of Francis Galton on individual differences. The concept of individual differences is a basic concept underlying psychological testing. Francis Galton (1822-1911) was the first scientist to undertake systematic and statistical investigation of individual differences. He demonstrated that individual differences exist in human sensory and motor functioning, such as reaction time, visual acuity and physical strength. James McKeen Cattell extended Galton’s work. Cattell also coined the term mental test in 1890. Before Galton, there were other important works in the history of psychology, but difference in human abilities was not focused upon until the work of Galton. Weber (1795-1878) experimented on weight discrimination, vision, hearing and the two point-point threshold. Fechner (1801-07) contributed significantly in the understanding of relation of mental processes to physical phenomena (for example, how the change in the intensity of sound will affect the auditory perception). Wilhelm Wundt (1832-1920) who established the first psychological laboratory in 1879 in Leipzig, Germany, was working on the measurement of mental processes years before. In 1862 he experimented with thought meter to measure the speed of thought.

Thus, psychological testing developed from two lines of enquiry:

- One based on the measurement of individual differences by Darwin, Galton and Cattell
- The other, based on the work of the German psychophysicists – Weber, Fechner and Wundt.

Modern psychological tests were constructed in response to the needs of classifying the mentally and emotionally handicapped. The Seguin Form Board Test (1866) was developed by O. Edward Seguin (1812-1880) to educate and evaluate the mentally

disabled. An important breakthrough in the creation of modern tests came at the turn of the twentieth century with the publication of intelligence test by Alfred Binet and T. Simon in 1905. With time, more developments were seen in the field of testing with a range of testing devices like personality tests, performance tests, aptitude tests, interest inventories, educational achievement and multifactor tests etc.

As a learner of psychology, you are suggested to read more on the development of psychological testing – how it started, what were the landmarks in the history of psychological testing. You can find a brief overview of the early developments in the field of psychological testing in the table given below:

**Table 1: A Summary of Early Landmarks in the History of Testing**

1862 CE	Wilhelm Wundt uses a calibrated pendulum to measure the ‘speed of thought’
1884	Francis Galton administers the first test battery to thousands of citizens at the International Health Exhibit
1890	James Mckeen Cattell uses the term mental test in announcing the agenda for his Galtonian test battery
1905	Binet and Simon constructed the first intelligence test
1914	Stern introduces the concept of IQ or intelligence quotient- the mental age divided by chronological age
1916	Lewis Terman revises the Binet-Simon scales, publishes the Stanford-Binet test. Revisions appear in 1937, 1960, and 1986.
1917	Robert Yerkes spearheads the development of the Army Alpha and Beta examinations used for testing World War I recruits
1917	Robert Woodworth develops the Personal Data Sheet, the first personality test
1920	Rorschach Inkblot test published
1921	Psychological Corporation- the first major test publisher-founded by Cattell, Thorndike and Woodworth
1927	The first edition of the Strong Vocational Interest Blank published
1939	Wechsler-Bellevue Intelligence Scale published. Revisions published in 1955, 1981 and 1997.
1942	Minnesota Multiphasic Personality Inventory published
1949	Wechsler Intelligence Scale for Children published. Revisions published in 1974, 1991

**(Adapted from: Psychological Testing by R J Gregory 2004: 51)**

### **Types of Tests**

Psychological tests can be classified into various types on the basis of administration, nature of items, time limit, mode of response, the behaviour they measure, and on the basis of the structure of the test.

Based on test administration, there are two types of tests: Individual tests and Group tests. The tests which can be given to one person at a time are known as **Individual tests**. **Group tests** can be administered to more than one person at a time by a single examiner.

Tests may also be classified on the basis of nature of items or content of items used. In this category, a test may be a verbal test, nonverbal test, performance test, or non-language test. A **verbal test** is a paper-pencil test. In **non-verbal test**, language is only used in instructions; figures and symbols are used in items. In a **performance test**, the test participant performs on a task rather than answering questions. Such tests do not use language in the test, but instructions may be given by using language, gestures, or pantomime. In **non-language test**, the test does not use any form of written, spoken or reading communication. Instructions are usually given through gestures and pantomimes. Such tests are administered to people or children who cannot communicate in any language.

On the basis of time constraint in the test, if the test has simple items and has a time limit, then it is a **speed test**. On the other hand, a **power test** will have no restriction of time limit, but includes difficult items.

Test may also be objective and subjective. In **objective test** there is a specific response to be given (True/False) and the scoring process is free of personal judgement or bias. **Subjective test** consists of items such as essay questions or responding to inkblots, where there is less specific response. The scoring may thereby, be influenced by personal attitude of the scorer.

Tests can also be classified as achievement tests, attitude tests, interest tests and personality tests. If we categorize tests according to the type of objects/aspects they measure, these tests are put under a broad category: ability tests. **Ability test** measure skills in terms of speed, accuracy or both. For example, in the test of mathematical ability, the more problems you solve accurately within the time limit, the more will be your score. Ability is a broad term which encompasses aptitude tests, intelligence tests and achievement tests. **Achievement tests** measure previous learning, like how much has been learnt in English in one year by sixth grade learners can be measured by term end examination. **Aptitude tests** measure potential for acquiring a specific skill. For example, how much can be learnt by a person in music if s/he is given specific training is the person's musical aptitude. **Intelligence tests** measure a person's general potential to solve problems, to adapt to changing circumstances and to benefit from experience. All the above three types of tests are inter related; sometimes these tests are included under the tests of human ability. Personality tests measure traits, temperaments and dispositions. **Personality tests** can be categorized on the basis of the structure of the test.

Tests are also distinguished on the basis of whether the test is clearly structured like a questionnaire or it is semi-structured or uses unstructured stimulus. Unstructured or semi-structured tests are commonly known as **projective tests**. The test stimulus in projective tests is ambiguous, like ink-blot in Rorschach inkblot test.

It should be clear to you by now, that psychological tests are mainly used to assess individual differences in various human abilities and personality. The most common uses of tests are classification, diagnosis and treatment planning, self-knowledge, program evaluation and research. Psychological tests can be used in different settings like schools, hospitals, organizations and welfare organizations. They can also be used for research purpose. They are not only used to diagnose mental disorders, but may also be used to



select individuals for different jobs, to determine career choice and grades, etc. Tests are also used to assess personality and adjustment pattern.

Thus psychological tests have varied use and they help in gaining better understanding of different aspects of the individual. However, these tests are developed following a systematic, scientific method, and should be used with utmost care as they deal with human beings. Hence, you need to learn the practicals in this course in a proper way.

### **Basic Principles of Psychological Testing**

By principles of psychological testing we mean the basic concepts and fundamental ideas that underlie all psychological tests. Reliability, validity, test administration and standardization are some of the fundamental concepts that we will discuss here.

#### **a) Reliability**

Reliability refers to consistency. The reliability of a test is its ability to yield consistent results. A good test should be reliable – that is, it should give similar results whenever a person takes it. It should give similar results even if different persons administer and score it. Reliability is not an all or none matter, it is a matter of degree. ‘In more technical terms, reliability refers to the degree to which test scores are free of measurement errors’ (Kaplan and Saccuzzo 2009: 22). The British Psychological Society Steering Committee on Test Standards says that reliability is a reflection of ‘how accurate or precise a test score is’ (1999: 4).

Measures of reliability are usually based on correlation coefficients. A correlation coefficient ranges from +1.0 to -1.0. It is the measure of the strength of association or similarity between two sets of scores obtained by the same person or group. In psychological tests, perfect reliability usually does not exist.

There are several different ways of assessing reliability: Item-total correlations, Test-retest reliability, Split half reliability, Factor and principal component analysis and Inter-rater reliability. The choice of method depends on the needs of the investigator. In test-retest reliability method, the same test is administered twice to the same group and coefficient correlation is calculated for the scores on both the test. Alternate forms reliability is estimated with the help of alternate form of the same test. The investigators sometimes develop alternate form of the test which has same content and covers the same range and level of difficulty. Both forms of the test are administered on the same group and the test scores are correlated to find out the reliability of the test. It is also called equivalent or parallel forms reliability. Split half reliability is estimated by correlating the scores obtained from equivalent halves of a test administered once to a representative group. In the item total correlations the investigator calculates the correlation between scores on each item of the test and the total score on the test. Inter-rater reliability is calculated when the measured behaviour is rated by observers. Ratings of different observers are correlated to measure the correlation coefficient. There are different statistical methods used to assess reliability: Cronbach’s alpha, Kuder- Richardson (KR-20), Pearson correlation and Guttman’s coefficient and factor analysis.

(You can read more about reliability and validity on <http://psychology.wadsworth.com/book/gravetterwallnau5e/index.html>)

What should be the accepted level of test reliability or when do we say that the particular test should be used as it has good reliability index? There is no such fixed criterion for a good reliability. Some authors suggest that reliability should be at least .95. But in the words of Guilford and Fruchter (1978), ‘There has been some consensus that to be a

very accurate measure of individual differences in some characteristics, the reliability should be above .90. The truth is, however, that many standard tests with reliabilities as low as .70 prove to be very useful. And tests with reliabilities lower than that can be useful in research.

### **b) Validity**

A valid test is one that measures what it is supposed to measure. 'A test is valid to the extent that inferences made from it are appropriate, meaningful and useful.' (Standards for Educational and Psychological Testing, 1999). The first essential quality of a valid test is that it should be highly reliable. If a test yields inconsistent results, (i.e. it is not reliable) it can not be correlated with any criterion (some behaviour or personal accomplishment etc.). But high reliability does not guarantee high validity of the test. The relation between reliability and validity can be discussed with the following example: 'Sir Francis Galton's sensory and motor measures could never have been valid if they had not been reliable. .... Yet even though some of Galton's measures turned out to be very reliable, later evidence showed that they were not valid measures of intelligence. The measures yielded similar scores time after time, but those scores were poorly correlated with validity criteria such as school grades and teacher ratings of intelligence.' (Morgan, King, Weisz and Schoplar, 1997: 520).

There are several different types of validity. One or more methods can be selected depending on the needs of the measure. Different ways of measuring validity have been grouped into three categories: Content validity, Criterion-related validity, Construct validity. Content validity is 'an estimate of validity of a testing instrument based on a detailed examination of the contents of the test items; contents here means the actual constituent material of the test item' (Reber and Reber 2001: 781). Content validity depends on the judgment of experts on the relevance of the items used in the instrument. Criterion related validity is assessed by determining the relationship between test scores and some independent criterion. Gregory has included two different approaches under criterion related validity- concurrent validity and predictive validity (2004: 124):

- In concurrent validity, the criterion measures are obtained at approximately the same time as the test scores. For example, the current psychiatric diagnosis of a patient would be an appropriate measure to provide validation evidence for a paper-and-pencil psychodiagnostic test.
- In predictive validity, the criterion measures are obtained in future, usually months or years after the test scores are obtained. For example, a college entrance exam that is accurate in predicting the subsequent grade point average of examinees would possess criterion related validity.

Construct validity is 'a set of procedures for evaluating the validity of a testing instrument based on the determination of the degree to which the test items capture the hypothetical quality or trait (i.e. the construct) it was designed to measure. For example, if a test is supposed to provide a measure of intelligence one should ask: what traits or qualities (or constructs) actually characterize intelligence? Do the test items actually tap such constructs?' (Reber and Reber 2001: 781). Face validity is dependent on whether the test looks valid to test users, examiners and examinees. Gregory comments that face validity is important for social acceptability of the test but is irrelevant for psychometric purposes.

### **c) Norms**

Suppose someone gets 50 marks on an intelligence test. This score has no meaning in

itself. In psychological testing the scores obtained on a test are called raw scores. These scores are simply overall score or the performance on the test, like the number of problems solved in an intelligence test. These initial scores are converted to some form of standard scores based on a norm group. 'A norm group consists of a sample of examinees who are representatives of the population for whom the test is intended' (Gregory 2004: 81). For example, if a test is designed to study the value system of twelfth graders, the test will be given to large number of such age group (from rural, urban, rich, middle class, poor etc.) to determine the distribution of raw scores. On the basis of collection of scores, the test developer will provide derived scores. These scores are known as norms. Norms can be in the form of percentiles ranks, stanines, stens, age norm, grade norms or standard scores.

A percentile expresses the percentage of scores in a sample that fall below it. A score at 50<sup>th</sup> percentile indicates that 50% of the scores fall below it. Percentile should not be confused with percent correct. Percentile is a comparative score. It tells where your scores place you in a particular sample (norm group) whereas percent tells the number of questions answered correctly by you. 50% expresses how much was attempted correctly on an intelligence test and this 50 percent can be placed at the percentile of 50, 90, or 80 depending on the performance of the sample. Percentile 1 is the lowest rank and 100 percentile is the highest rank.

Standard score is any derived score based on standard deviation. It is more commonly known as z-score. It expresses the distance from mean in standard deviation units. T-score is a variant of standard score. It was suggested by McCall (1922). In case of standard score, the value of mean is taken zero whereas in a T-score the value of mean is 50 and standard deviation of 10.

Stanine (or standard nine) scale was developed by the United States Air Force during World War II. In stanine scale all raw scores are converted to single digit system ranging from 1 to 9. Sten scale (standard ten) was proposed by Canfield (1951). It is a ten unit scale with 5 units above and 5 units below the mean.

Age norms express the level of performance with reference to age. Grade norms express the level of performance with reference to grade level.

There are many such norms developed for different tests, such as mental age and I.Q. You will know more about them while using various tests with different norms.

### **Test Administration and Scoring**

Test administration can be either individual or group. The administration of a test should be according to a uniform and specified set of instructions. This is the first principle of test administration. 'A test is considered standardized if the procedures for administering it are uniform from one examiner and setting to another' (Gregory 2004: 54). If a test is not administered according to the specified set of instructions, there will be no uniformity in the administration of the test. The result of such a test will not be reliable. Test administration should follow the guidelines given in the manual. Some important points that the investigator should know before administering a test are given below:

- Every psychological testing procedure, as we already said, has a purpose and rationale.

Before using a test, tester should see whether the test fulfills the purpose at hand. The question that one needs to ask is, why do I use this test, what is the purpose of using this test? If all the questions are satisfactorily answered, then one should proceed and use the particular test. But if the use of the test is not rationalized on any ground - purpose, population, or context of using the test – the test should not be used.

- Before using a test, examiner must be familiar with the materials, instructions and the procedure to be followed in the test.
- An examiner should be sensitive to disabilities in the examinees. Disabilities related to hearing, vision, speech or motor control may affect test performance. In case of unrecognized disabilities, serious errors of interpretation may occur.
- Examiners should allot proper time for the entire testing process: set up, reading instructions and actual test taking by the examinees. Allowing too much time for a test is equally erroneous as allowing less time.
- Instructions should be read out in a clear and loud voice. Examiners must stop to answer the questions if the instructions are not clear to examinees.
- The physical conditions (testing room) should be suitable for the test. The conditions such as illumination, temperature and humidity should be taken into consideration before the test. The testing environment should be pleasant, quiet and well illuminated with proper writing desk (in case of a test where answer sheet is required to be filled up).
- Establishing rapport is the first thing that examiners need to do when giving a test to an individual or a group. 'Rapport is a comfortable, relaxed, unconstrained, mutually accepting interaction between persons' (Reber and Reber 2001: 597), especially between an examinee and an examiner. It is essential requirement to motivate examinees to cooperate during testing. It is more important in individual testing and particularly when examinees are children. Failure in establishing rapport may cause anxiety, hostility, and uncooperative behaviour in examinees/test participants.
- The scoring of the test should follow the pattern as specified in the test manual. If scoring is not numerical, the method of interpretation should also follow the guidelines as given in the test manual.

Thus, a psychological test is a standardized instrument in the sense that it provides well defined procedure and instructions, the items used in the test are reliable and valid and the test depicts scores in terms of standardized scores. In the present times when we have access to computer assisted test administration and scoring, the accuracy and precision in administration will require proper training and practice of the examiner both on technical and human grounds.

### **Report Writing**

After administration of a psychological test, the findings are to be presented in the form of a report. Report should be written clearly. The report should be properly divided into sections and subsections and the findings should be tabulated wherever required.

The report should be written in passive voice. For example, instead of writing 'I gave the test booklet to the examinee', one should write, 'the test booklet was given to the examinee'. The report should be written in a standard format.

### **Being Qualified and Trained in Psychological Testing**

There are two aspects of being trained in psychological testing:

#### **a) Technical and Theoretical Knowledge**

One should have technical and theoretical knowledge of psychological testing and its applications.

Some basic components of this knowledge are:

i) *Knowledge of test construction*

Today testing is required in every field: schools, industries, selection agencies, hospitals, special education centers, rehabilitation centers and various other organizations. A psychologist may face the task of choosing a test from the available tests or developing a test as the situation demands. In both the situations, knowledge of test construction is mandatory. If one needs to select a test, one should have the knowledge of basics of test construction. How the test is developed? Whether it has proper norms or it is standardized, what is the method of scoring, etc. All this information requires technical knowledge about the test construction process. Otherwise, decision of choosing will be fraught with biased assumptions. The theoretical knowledge pertains not only to the selection of test, but also to the construction of tests. One might face such a situation when no test is available, or the available test is outdated, or not suitable culturally. Suppose you are required to make an index of happiness of people in your country or your state or city. How to prepare such an index? You come to know that one such procedure is available in some other country. But the definition of happiness may differ from one country to the other. At one place, it may be family which is primary source of happiness to persons, but at the other, it may be secure future and material prosperity. Thus, one might decide to prepare a questionnaire to study the level of happiness.

ii) *Efficiency in application*

Which measure one should choose if one is to find out whether a child has learning disability or not. One might need a range of procedures – paper pencil test (e.g., tests of learning and intelligence), observations, interviews with the child, parents and teachers. Which test one should choose - verbal or non-verbal, some qualitative approach or quantitative or both, whether the test is fit for the cultural background. These decisions need not only theoretical knowledge, but also insight on the part of the investigator which comes with knowledge, practice and experience.

iii) *Efficiency in Scoring and Interpretation*

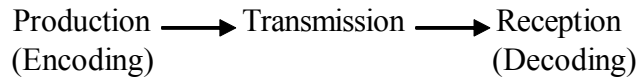
Scoring procedures in testing are developed through rigorous statistical procedures. While using psychological tests, one is required to have sound knowledge of statistical principles applied in psychological testing. How the reliability and the validity of the test have been calculated? How the norms of the test have been developed? Knowledge of these technical aspects helps both in construction, selection, revision and adaptation of a test. Interpretation is an essential aspect after scoring which also involves explaining the significance of the scores, for instance, what does it mean for a person who gets IQ score of 94? To fulfill all these purposes, an appropriate explanation is an essential requirement from the part of the investigator.

b) **Developing Skills**

One needs to have appropriate skills necessary for the application of psychological testing, for example communication skills, being a good observer and empathetic listener, etc.

The work of a psychologist is more like an artist. S/he needs to observe, listen, feel and be aware of the body language of the test taker. Observation here is not only a method used to study a specific problem. It should be developed as a habit. How to see things: people talking to each other in buses, trains, or offices; youngsters chatting outside a mall, people writing their views in newspapers and magazines, people behaving with

each other- in families, in offices, in traffic etc. It need not be a deliberate exercise once it is developed as a habit. ‘A psychologist should be a good writer’, said a wise man. Psychology is a science in the methods it uses, but it is essentially an art in its application. This art will develop gradually when you observe and contemplate and develop the habit of writing things systematically. After observation, another important skill is communication skills. Psychologists working as therapists, counsellors, trainers or psychometricians require communication with others. Communication is a chain of events from the speaker to the listener. The chain of events involves



Thus, communication involves a message (information) a code (language) and a channel (written-visual, spoken-auditory) through which information is transmitted. A psychologist should learn to be a good listener before learning to be a good speaker. S/he should learn where and when to speak and where not to. Being just a listener is not sufficient; a psychologist should be an empathetic listener. S/he should feel what others are feeling.

Psychologists should be sensitive to the cultural differences. Various behaviours have their roots in the cultural milieu of a person. The way people talk, greet, their eating habits and sometimes their sensitivity to their surroundings is affected by the environment they live in. If a psychologist is not sensitive to the cultural and environmental factors, there will be no meaning of the inferences drawn from observations and testing, and ultimately will be harmful for the individuals and society at large.

Knowledge of ethical principles during testing is also expected from a trained psychologist. Ethical guidelines for testing issued from time to time are called ethical principles and code of conduct. Psychologist should comply with these principles to avoid any mistake in research and testing. In general, we can phrase principles of ethical treatment as,

- 1) Right to safety
- 2) Right to respectful treatment
- 3) Right to confidentiality
- 4) Right to be informed – technically called informed consent – an examinee should be informed about the nature of the test, risk involved, purpose, and use of information of the test beforehand and only if s/he agrees the examiner should proceed with testing. Examinee should also get informed about the results of the study and use of the test findings.

All the above rights of examinees should be respected during testing and research. In a nutshell, a psychologist should take responsibility of working with human beings very honestly that will serve the purpose well for both the examiner and the examinee.

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## **2.0 PRACTICAL IN BPCC-103 (2 CREDITS)**

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As you know, BPCC-103: Psychology of Individual Differences is of 6 credits, out of which 4 credits are for theory and 2 credits are for practical. Thus, to complete the course BPCC-103, you must complete both 4 plus 2 credits. To complete the four credits of theory, you will study all the ten Units in this book, prepare and submit two Tutor Marked assignments (TMA) related to these ten Units at the study centre, and appear for term end examination on this at examination centre. To complete the two credits of practical, you will conduct the prescribed practicals at your study centre (**attending practical classes/counseling sessions are mandatory**), prepare practical

notebook/record and submit at the study centre, and then appear for term end examination for practical at the study centre.

Practical component of BPCC-103, which is of 2 credits, will be carried out in the Psychology Laboratory set up. For two credit practical, there will be two classes at the study centre. The number of counselling sessions allocated for practical are 02 sessions (01 session is of 03 Hours duration).

You will get to know the schedule of practical (as well as theory) classes from the study centre. You may also visit the website of your Regional Centre, where the schedule of sessions is displayed. Ensure that you do not miss any practical class. Unlike counseling sessions for the theory component of the course, the sessions organized for the practical are mandatory. Thus, you should attend all the sessions. There is weightage given to attendance in evaluation also (refer to 5.0 Evaluation scheme).

In the practical classes, you will learn how to administer psychological tests in a controlled condition, that is in a laboratory setup at your Study Centre. The test will be carried out on a human participant and you will be the test administrator. While conducting the practicals in the classroom set up amongst your classmates, you may also be the participant for another learner.

The tests that you will learn in practical are related to various topics that you have read or about to read in the theory component of BPCC 103. Your academic counselor will take the practical classes and supervise you while conducting the practicals on each other in the classroom set up. You will learn how to administer a psychological test, score it and interpret it. You will follow a standard procedure for administration, scoring and interpretation of the result and findings. You will also learn about ethical issues in psychological testing. You will clarify all your doubts arising while pursuing this course from your academic counselor.

As part of this course, you will learn about the following tests:

- a) Bhatia's Battery of Performance Test of Intelligence (related to Intelligence)
- b) Sixteen Personality Factor (16 PF) (related to Personality)

The tests will be conducted and written in proper format (as mentioned in section 4.0) in the Practical Record/Notebook. The Practical Notebook should include a Title page (format given in Appendix I) and a Certificate (Appendix II). This notebook is to be assessed by the concerned academic counselor who has taken your class.

Now let us see a brief description of each of these tests that you will be doing in your practical.

### **Practical 1: Sixteen Personality Factor (16 PF)**

You have learned about personality, its meaning, theories and assessment in Units 1 and 2 in BPCC 103. As you know, personality refers to organized, consistent and general pattern of behaviour of a person across situations which help understand his/her behaviour as an individual. Personality assessment has diverse implications.

There are two main trends in the area of personality assessment: use of unstructured projective techniques (for example, Rorschach test) and structured approaches such as self-report inventories and behaviour ratings. 'Personality inventories are questionnaires on which individuals report their reactions or feelings in certain situations. Responses to subsets of items are summed to yield scores on separate scales or factors within the inventory' (Hilgard and Atkinson 2003: 459). Several personality inventories

are based on preexisting theories. Some examples of theory guided inventories are Edward Personal Preference Schedule (EPPS), Personality Research Form (PRF) (both based on Murray's need press theory of personality) and Myers-Briggs Type Indicator (MBTI) (based on Carl Jung's theory of personality types). Apart from theory based inventories, factor-analytic approaches contribute in developing theories based on the initial test findings. With factor analysis, psychologists identify personality dimensions that can define personality. Cattell has identified 16 personality factors using factor analysis.

We are aware about the number of approaches and theories that been developed to understand and explain the concept of personality. These theories are based on different models of human behavior. Each throws light on a significant aspect of personality but not all aspect of personality. Psychologists distinguish between type and trait approach to personality. Type approach attempts to comprehend human personality by examining certain broad patterns in the observed behavioral characteristics of the individual. Each behavioral pattern refers to one type in which individuals are placed in terms of the similarity of their behavioral characteristics with that pattern. Whereas, the trait approach focuses on the specific psychological attributes along which individuals tend to differ in consistent and stable ways.

Efforts to categorize people into personality types have been made since ancient times. The Greek physician Hippocrates proposed a typology of personality based on fluid or humor. He classified people into four types (sanguine, phlegmatic, melancholic and choleric); each characterised by specific behavioral features. Ayurveda classifies people into the categories, Vat, Pitt, and Kapha, on the basis of three humoral elements called tridosh. There is another typology of personality based on the Trigunas, i.e. Sattva, Rajas and Tamas. All the three gunas are present in each and every person in different degrees. The dominance of one or the other guna may lead to a particular type of behaviour.

Sheldon using body build and temperament as the main basis, proposed Endomorphic (fat, round, soft, relaxed, and sociable), Mesomorphic (strong body build), Ectomorphic (thin, long, fragile body build) classification. Jung proposed another important typology by grouping people into introverts and extroverts. Recently, Friedman and Rosenman have classified individual into Type A and Type B personality. Type A personality seems to possess high motivation, lack patience, feels short of time, and be in a great hurry. Such people are prone to developing coronary heart disease and hypertension. Absence of such traits is Type B personality. Morris suggested a Type C personality, one that is prone to cancer. Type D personality is characterised by proneness to depression. Trait theorists are mainly concerned with the description of characterization of basic components of personality. They are mainly interested in the 'building blocks' of personality. Human beings display a wide range of variations in psychological attributes, yet it is possible to club them into smaller number of personality traits. A trait is considered as a relatively enduring attribute or quality on which one individual differs from one another. They include a range of possible behaviour that is activated according to the demands of the situation. A number of psychologists have used traits to formulate their theories of personality, for example, Allport, Eysenck, Cattell.

### **About the Test**

Sixteen Personality Factor (16 PF) test is constructed by British psychologist, Raymond B. Cattell. According to Cattell, there is a common structure on which people differ from each other. This structure could be determined empirically. With the help of statistical technique called factor analysis, he discovered the common structures. He



found 16 primary or source traits. The source traits are stable, and are considered as the building blocks of personality. Besides these, there are also a number of surface traits that result out of the interaction of source traits. Cattell described the source traits in terms of opposing tendencies. Cattell developed Sixteen Personality Factor Questionnaire (16 PF), for the assessment of personality. This test is widely used by psychologists today.

The test was first published in 1949, thereafter revised in 1956 and 1962. Five alternative forms of the 4th edition were released between 1967 and 1969. Fifth edition of 16 PF was released in 1993. PF stands for 'Personality Factors' and there are sixteen personality factors, hence, it is known as 16 PF. These 16 factors are the major source traits. Cattell's theory asserts that every person possesses a degree of each of the following sixteen traits (Cattell also uses the term factors).

For each trait, factor label or code letters are used. The major source traits as represented on 16 Personality Factor Inventory is as follows:

### **Factors Description**

- A** Outgoing- Reserved
- B** Intelligence
- C** Stable-Emotional
- E** Dominant-Submissive
- F** Sober-Happy-go-lucky
- G** Conscientious-Expedient
- H** Venturesome-Shy
- I** Tough-minded-Tender-minded
- L** Trusting-Suspicious
- M** Imaginative-Practical
- N** Shrewd-Forthright
- O** Apprehensive-Placid
- Q1** Radical-Conservative
- Q2** Self-sufficient-Group-dependent
- Q3** Undisciplined-Controlled
- Q4** Relaxed-Tense

The 16 PF Inventory is a paper pencil test that consists of 185 multiple-choice items. The participant has to select one option. There is no right or wrong answer to the statements. On an average, it takes 35-50 minutes to complete the test.

### **Practical 2: Bhatia's Battery of Performance Test of Intelligence**

You have learned about the concept of Intelligence, the theories and assessment of intelligence in Units 3, 4 and 5 in BPCC 103.

In our day to day life we often say, ‘she is very intelligent’, or ‘he is a brilliant learner’. We make judgments about others’ mental ability by their behaviours and specific achievements. Do you think one can measure ‘how much intelligent a person is?’ This is exactly what psychologists started with and endeavored to develop some scientific procedures to assess mental ability a person possesses. The interesting thing about intelligence is that every test developed to measure it, defines the construct in its own way. Let us first briefly know about what is intelligence and the early developments in measurement of intelligence

### What is Intelligence?

David Wechsler defined intelligence as “the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment.” Alfred Binet, the French psychologist, devised modern intelligence test, believed that intelligent behaviour would be manifested in such mental abilities as reasoning, imagination, insight, judgement and adaptability. Some psychologists held the view that all the cognitive abilities (such as abstraction, learning and dealing with novelty) are the manifestation of a single underlying factor, called General Factor or ‘g’ factor, and specific abilities such as artistic ability, linguistic ability, mathematical or spatial ability are referred to as Specific factor or ‘s’ factor.

Thus, we may define intelligence as,

- The ability to behave adaptively
- The ability to function successfully within a particular environment
- Ability to learn new things quickly, to solve different kinds of problems

Moreover, it is said that intelligence is what the intelligence test measure. “Intelligence is, conceptually, what it has always been, the ability to profit from experience-and pragmatically, what it has become-that which the intelligence tests measure” (Reber & Reber 2001: 361).

**Origin and Early Developments** ( The first attempt to develop tests of intellectual ability was made more than century ago by Sir Francis Galton, a naturalist and a mathematician, in 1884. Galton administered a battery of tests measuring variables like head size, reaction time, visual acuity, auditory threshold and memory for visual forms, on more than 9000 visitors at the London exhibition. Galton found no difference on intelligence, between eminent scientists and ordinary people on the basis of head size. Also, reaction time has also not related to other measures of intelligence. James Mckeen Cattell (1860- 1944) has also made significant contributions to the measurement of individual differences. ( Mental testing movement began with the development of the first intelligence test by Alfred Binet and another French psychologist Théophile Simon in 1905. The French government commissioned Binet to discover an objective method of assessing intellectual level of French school children. The major concern was to identify children who were unable to profit from public school education. The task for Binet and Simon was,

- To devise a scale that would select children with intellectual disability
- Indicate the nature of special instruction that could benefit those children
- To improve the diagnosis of severely retarded institutionalized children, though it was the secondary objective.

Binet assumed intelligence should be measured by tasks that required reasoning and problem solving abilities. Binet published the first test in 1905 in collaboration with Simon and revised it 1908 and in 1911. The test was constructed with items of common information, word definitions, reasoning items, and ingenuity. The measure of intelligence was mental age (MA). He differentiated it from chronological age (actual age). In Binet's views, a slow or dull child is like a normal child whose mental growth is retarded. The slow child would perform on the level that is below his actual age whereas the bright child can perform up to the level of the children above his/her chronological or actual age. Thus the items in the Binet's scale are arranged in increasing level of difficulty.

In 1916, Lewis Terman, published the Stanford version of Binet test, that is known as the Stanford Binet Intelligence Scale (SBIS). Terman adapted the test items developed by Binet for American school children. SBIS was revised in 1937, 1960, 1972, 1986 and recently in 2003. Binet's concept of MA was retained in SBIS. But, Terman used intelligence quotient (*IQ*) as an index of intelligence. The term *IQ*, from the German *Intelligenz Quotient* was suggested by the German psychologist William Stern (1912). Intelligence quotient (*IQ*) expresses the relation of mental age (MA) to the real age (chronological age-CA):

$$IQ = MA/CA \times 100$$

Thus, *IQ* is calculated by dividing a child's mental age in months by his chronological age. The number 100 is used as a multiplier to eliminate the decimals. *IQ* in intelligence tests now is no longer calculated using this equation.

Further developments in the field of measurement of intelligence attempt to convert the raw scores or actual scores obtained on the test into standard scores, which express the *IQ*. These scores are converted by the norms tables given in the test manual which contain age appropriate standardized scores. The 1986 revision of the Stanford-Binet uses percentiles to express the level of intelligence in a particular group. The test is grouped into four broad areas: verbal reasoning, abstract/visual reasoning, quantitative reasoning and short term memory.

It was felt that Stanford-Binet test depended heavily on linguistic ability. In 1939, David Wechsler developed a new test-Wechsler Adult Intelligence Scale (WAIS). WAIS comprises of a verbal scale and a performance scale. These two yield separate scores and a full scale *IQ*. Later, similar tests were used by Wechsler for children, Wechsler Intelligence Scale for Children-WISC (1958). The verbal scale in WAIS consists of information, comprehension, arithmetic similarities, digit span, vocabulary and letter number sequencing. The performance scale consists of digit symbol, picture completion, block design, picture arrangement, matrix reasoning, object assembly and symbol search. Both the Stanford and Wechsler scales show good reliability and validity and are widely used tests to measure intelligence.

The above tests were individual tests of intelligence, i.e. these tests may be administered on one person at a time. The wider social settings sought the need for such test that can be given to a large number of participants at a time. Group ability tests were devised for such purpose. Group ability tests may be administered to a large number of people by a single examiner and are usually pencil and paper test. Individual test focuses on global ability, their major purpose being to assess a general trait. The focus of the group tests is to predict academic or occupational performance. Group test of intelligence are more often used for initial screening in schools (Scholastic Assessment Test-SAT) and industries. These tests may be followed by individual testing if more information is required. Individual tests are preferred by psychologists in clinics, hospitals and other settings where a clinical diagnosis is required.

Apart from the individual and group test, another major classification is verbal and non-verbal tests. As the name implies, verbal tests can be used with literate persons while non verbal tests are preferred for illiterate persons, and participants with disability in some respect (like visually challenged). Paper pencil tests and performance tests are one more variant of intelligence test. Performance test require some sort of activity, like arranging the blocks, completing a picture with the given cards and choosing a correct matched card for a particular picture or symbol.

In the present practical, you will learn about a performance test of intelligence.

### About the Test

Bhatia's Battery of Performance Test of Intelligence was constructed by C. M. Bhatia in 1953. This test was developed for use on Indian Population. It includes the following five sub tests.

- i) **Koh's Block Design Test (Test No. 1):** This battery includes 10 designs from the original 17 designs from the Koh's test. The time limit for first five designs is 2 minutes each and for the remaining five, the time limit is 3 minutes each. The cards with a variety of coloured designs are shown to the test taker and he is asked to reproduce them using a set of colored blocks. Performance is based not just on the accuracy of the drawings but also on the examiner's observation of behavior during the test, including such factors as attention level, self-criticism and adaptive behavior (such as self-help, communication, and social skills).
- ii) **Alexander Pass-along Test (Test No. 2):** All the designs of the original test are included in this battery. The first four designs have to be completed in two minutes each and the rest of the four, have to be completed in 3 minutes each. The solution of the first box is demonstrated to the participant. The test will stop when the participant fails to perform correctly on two successive trials.
- iii) **Pattern Drawing Test (Test No. 3):** This test includes eight cards. Every card has a pattern and the participant is required to draw these patterns in one go without lifting the pencil. The time for the first four cards is 2 minutes and for the rest of the four cards, it is 3 minutes each. The test will be stopped after two incorrect successive trials.
- iv) **Immediate Memory (Test No. 4):** This test has two parts: *digit span forward* and *digit span backward*. The test taker is required to repeat the numbers the experimenter says. The number of digit is increased on every trial. The test is continued till the participant repeats it successfully in the same order. This is digit span forward. In the backward recall, the test taker repeats the numbers in the backward position, from the last to the first. This recall is also continued till the participant successfully repeats the sequence.
- v) **Picture Construction Test (Test No. 5):** This test requires the subject to construct a picture that is given in parts. The parts are to be meaningfully combined to construct the picture. The time limit for first two pictures is 2 minutes each and the rest of the three pictures, it is 3 minutes each.

Individual administration of this test takes less than one hour. Maximum 95 marks can be obtained in the complete test. Maximum marks for the 1st, 2nd, 3rd, 4th, and 5th test are 25, 20, 20, 15, 15 respectively. The main objective of the test is to measure the intelligence of children and less educated or illiterate Indians. The norms for the test have been obtained for the boys of 11 and 16 years. Later, the norms for girls have also been obtained.

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### 3.0 ROLE OF ACADEMIC COUNSELLOR

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Academic counselor will take the practical sessions/classes at the study centre. There will be a total of two classes (each of three hours duration) for the 2 credits practical component of BPCC 103.

**The role of academic counselor in taking the practical sessions can be described as follows:**

- 1) Go through the manual of the test thoroughly.
- 2) Explain the test in detail to the learners in the class.
- 3) Introduce the test in terms of:
  - History of the Test
  - Author
  - Development of the test
  - Features of the test (e.g. age group, number of items, dimensions, reliability, validity, norms)
  - Administration
  - Scoring
  - Interpretation
  - Uses of the test
- 4) After the introduction of the test, demonstrate to the learners how to administer the test.
- 5) The demonstration of administration will include the following:
  - a) Preparation for the test, for instance, keeping the test material (test booklet, answer sheet, stopwatch) ready.
  - b) Establishing rapport with the participant, making him/her feel comfortable
  - c) Explaining the test (procedure, time limit, precautions)
  - d) Taking informed consent for undergoing the test and informing the participant that the test findings will remain confidential.
  - e) Taking permission to record the session, wherever applicable.
  - f) Reading the instructions for test administration from the manual and showing it to learners as to from where they have to read the instructions.
  - g) Clearing all doubts in the mind of the test taker/participant about the test administration.
  - h) The participant takes the test.
  - i) Taking the answer sheet from the participant after completion of the test.
- 6) Explain the scoring procedure (as given in the manual) to the learners.
- 7) Explain how to interpret the data.

- 8) Ask learners to administer the test on each other in pairs and monitor the same.
- 9) The learners will then administer the test on their own, score and interpret the results.
- 10) The learners will have to write a report of the test in the practicum notebook/record.
- 11) The practicum record will be evaluated by the academic counselor following the evaluation scheme given in Section 5.0

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## 4.0 FORMAT FOR WRITING PRACTICAL NOTEBOOK

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As mentioned above, you will be conducting and administering two psychological tests related to intelligence and personality. You will need to follow a specific format as given below while writing the practicum notebook/record. The notebook should be handwritten in a neat and organized manner. You need to keep a photocopy of the practicum notebook before submitting it at the study centre so that it will help you prepare for the practical examination. Acknowledgement (Appendix 3) can also be taken while submitting the practicum notebook at the study centre.

The format for writing the practicum notebook is given below.

- **Title:** This heading will mention the 'title' or 'name' of the practical e.g: 16 PF / Bhatia's battery of performance test of intelligence.
- **Aims/ Objectives:** This section will consist of the main objectives or purpose of the practical. For example, if you are performing a test on '16 PF' then the basic objective of the test will be: 'To assess the personality of the participant using 16 PF'.
- **Hypothesis/es (written in case of experiments only):** A tentative statement about the cause and effect relationship between the independent and dependent variables, is to be mentioned.
- **Introduction:** Here, the historical background of the test/ experiment is mentioned. The concept is defined and discussed. For example, in case of 16 PF, the historical background of 16 PF is described. The concept of personality is defined and the theories related to it are discussed, with a special focus on Cattell's personality theory.
- **Description of the Test/ Experiment:** Under this, the details with regard to the test experiments are mentioned, like author of the test, basic purpose of the test, number of items, dimensions/ factors included in the test, time limit, reliability, validity, and scoring.
- **Material Required:** The material required for the administration of the test (or experiment) is mentioned. For example, in case of 16 PF, the test booklet, answer sheet, scoring key, pencil, eraser are required.
- **Participant's Profile:** This will consist of all the detailed information about the participant, like, name of the participant (optional), age, gender, educational qualification and occupation.
- **Procedure and Administration:** The following sub headings are included here;

**Preparation:** The material required for conduction of the test/ experiment, like, test booklet, apparatus or instrument, answer sheet, stopwatch are kept ready.

**Rapport:** You have to mention that rapport was created with the participant and that she/he was well informed about the details of the test/ experiment.

**Instructions:** Instruction as given in the test manual/ experiment is included here.

**Precautions:** Precautions, if any, to be considered while administration of the test/ experiment are mentioned under this sub-heading.

**Introspective Report:** After completion of the test/experiment by the participant, an introspective report is to be taken, that is, the participant's feeling and constraints faced by him/her while undergoing the test/ experiment is mentioned under this sub-heading in first person within inverted commas.

**Scoring and Interpretation:** After the participant completes the test, the answer sheet is to be scored with the help of the scoring key and the data is to be interpreted with the help of the norms given in the manual. The scores can then be mentioned and interpreted under this heading. For experiments, the findings are to be analysed and mentioned here.

**Discussion:** You have to discuss the result based on the interpretation. It may be further analysed in the light of the introspective report. In case of experiments, the results may be supported by existing studies conducted in the field.

**Conclusion:** Under this heading, you have to conclude the findings of the test or the experiment.

### References

The books, websites and the manual referred to by the learner are mentioned in American Psychological Association (APA) format. These should be alphabetically listed.

#### For Books

Anastasi, A. (1968). *Psychological Testing*. London: MacMillan Company.

#### For Journal Article

Dennison, B. (1984). Bringing corporate culture to the bottomline. *Organizational Dynamics*, 13, 22-24.

#### For Book Chapter

Khan, A.W. (2005). Distance Education for Development. In: Garg, S. et.al. (Eds.) *Open and Distance Education in Global Environment: Opportunities for collaboration*. New Delhi: Viva Books.

#### For Websites

<http://www.mcb.co.uk/apmfirum> (accessed on 2.3.2011)

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## 5.0 EVALUATION SCHEME AND TERM END EXAM (TEE)

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The **evaluation** of practical component (2 credits) consists of both internal and external evaluation. Total marks for practical component is 100 (Internal assessment is 50 marks

and External assessment is 50 Marks). However, the weightage for internal evaluation is 70%, whereas external evaluation carries 30% weightage. The distribution of marks is as follows:

<b>INTERNAL</b>	<b>Marks</b>	<b>EXTERNAL</b>	<b>Marks</b>
Attendance	05	Conduction	20
Conduction of test/experiment	30	Evaluation of answer script	10
Practical Notebook	15	Viva-Voce	20
<b>TOTAL</b>	<b>50</b>	<b>TOTAL</b>	<b>50</b>

Internal evaluation is carried out by the academic counselor after the practical classes are completed, whereas external evaluation is done by the external examiner during the term end examination. Internal assessment refers to actual conduction of practicals in the classroom at the study centre and reporting them in the practical notebook in the prescribed format. You will then submit practicum notebook to the academic counsellor and get it corrected before the Practicum Term End Examination. There is also marks for attending the practical classes. External assessment refers to conduction/ administration of a test on the exam day (TEE) and appearing for viva- voce based on the test conduction.

**Term End Examination (TEE)** for the practical will be organized at the study center. You will have to deposit separate exam fee for the TEE of practical component. The exam fee is Rs. 150 ((it is subject to revision). Kindly check the latest fee amount applicable from [www.ignou.ac.in](http://www.ignou.ac.in)

You will bring the practical notebook at the time of examination. The duration of the examination will be of 3 hours. During the examination, you will conduct one test out of the two tests learned. The practical will be allotted to you by the way of lottery system. You will then collect the test material and start conducting the practical. You need to bring one participant on the day of exam, on whom the test/ experiment will be conducted. Once you finish conducting the practical, write the findings in the answer sheet. This will be followed by viva-voce. The participants may leave after the conduction of practical is over.

The practical answer sheets will be corrected by the external examiner and the viva-voce will also be conducted by the external examiner.

Minimum passing marks in the Practical component is 35. There is no re-evaluation in TEE of Practical.

**Date Range for Term End Examination of Practical in BPCC 103**

<b>TEE</b>	<b>Date Range for TEE</b>
June TEE	1st July to 14th August
December TEE	1st January to 15th February

**Note: The dates for TEE of Practical of BPCC 103 will not appear in the date sheet provided by SED, IGNOU. For this, please contact your respective study centres.**



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## **6.0 IMPORTANT POINTS FOR THE LEARNER**

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- There will be two practical counseling sessions/classes for practical at the study centre.
- Full attendance in practical classes is mandatory.
- You need to follow the format as given in the Guidelines while writing the practical notebook.
- There is evaluation component for attendance in the evaluation scheme for practical.
- Your academic counselor who conducted the practical classes will check your practical notebook and provide the internal marks.
- You need to pay the exam fee for appearing in the term end exam for practical.
- You need to conduct a test in the term end exam (you will bring one participant for this) and appear for viva by the external examiner.
- Passing marks for Practical is 35. There is no re-evaluation in TEE of Practical.



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**TITLE PAGE FOR PRACTICAL NOTEBOOK**  
**BA (Hons) PSYCHOLOGY**  
**IGNOU**

**Programme Code:** BA (Hons) Psychology

**Course Code:** BPCC-103

**Title of the Course:** Psychology of Individual Differences

**Name of the Learner:**

**Enrolment:**

**Address:**

**Phone No.:**

**Email:**

**Study Centre Name/Code/Address:**

**Regional Centre:**

**Date:** \_\_\_\_\_

**Signature of the Learner**

## CERTIFICATE

This is to certify that Ms/ Mr. \_\_\_\_\_  
of BA(Hons) Psychology, Semester II, has conducted and successfully completed the  
2 credits of Practical in BPCC-103: Psychology of Individual Differences.

### Signature of the Learner

Name:

Enrolment No.:

Name of the Study Centre:

Regional Centre:

Place:

Date:

### Signature of Academic Counsellor

Name:

Designation:

Place:

Date:

## **ACKNOWLEDGEMENT**

This is to acknowledge that Ms./Mr. ....  
Enrollment No. .... of BA (Hons) Psychology (Semester II)  
has submitted the Practical Notebook at the study centre  
....., Regional Centre .....

**Date:**

**Signature (with stamp)**  
(Coordinator, Study Centre)

