

# **Master's Degree Programme in Psychology**

## **HANDBOOK ON PRACTICUM EXPERIMENTAL PSYCHOLOGY AND PSYCHOLOGICAL TESTING (MPCL-007)**



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## 1.0 INTRODUCTION

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The MA Psychology Programme offered by the University will introduce you to the laboratory based course of practicum. The course code is MPCL-007 and it is of 8 Credits. In this course, you will learn how to administer tests and conduct experiments in a controlled condition that is in a laboratory setup. The test and experiments will be carried out on a human participant and you will be the experimenter or test administrator. At times, this situation may also be reversed as during the course you will carry out practical amongst your classmates. The tests and experiments are related to various topics that you have read or about to read in theory courses of this programme. While using the material, you will be directly supervised by your academic counsellor. You will follow a standard procedure for administration, scoring and interpretation of the result and findings. You will also learn about ethical issues as they apply in laboratory work.

Experiments mainly focus on studying cause and effect relationship between independent and dependent variables. The participant has to be active during the experiment as s/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 also known as 'introspective report'.

Psychological tests on the other hand, are administered in a standardized manner and include assessment of some mental process, trait or characteristic. The main characteristics of a good test are that it should be reliable, valid, possess good norms and should be appropriate for the person's age, cultural, linguistic and social background.

Psychological tests can be classified into various types on the basis of administration, time limit, nature of items. A test may be an *individual test* if the test administered on a single person, where as, if the test is given to a group of people it is called a *group test*. 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* may have a generous time limit but with difficult items. 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 human 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. 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 judgment 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.

It may rightly be said that psychological tests are used in various setups. 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. As parts of the course, you will learn the administration of tests related to intelligence, personality, social processes, and also experiments based on cognitive processes.

As an experimenter/test administrator, you will make use of different apparatus and test materials (test booklet, manual, and scoring keys) to study different aspects of human behaviour.

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## **2.0 PRACTICUM IN MA FIRST YEAR (8 CREDITS)**

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The following practical are to be conducted by the learners:

- Intelligence Testing (Bhatia Battery)
- Personality Testing (16 PF)
- Test for Social Behaviour (Vineland Social Maturity Scale)
- Family Pathology Scale
- Sociometry
- Problem Behaviour Checklist
- Span of Attention Experiment
- Memory Experiment

All eight practical are to be conducted in the psychology laboratory. Out of the above eight practical, five practical are to be written in proper format (as mentioned in this Handbook ) in Practicum Notebook. The Practicum Notebook should also include a title page (format given in Appendix 1) and a certificate (Appendix 2). This notebook is to be assessed by the concerned academic counselor. Actual conduction of practical and reporting it in practical note book (internal assessment) carries 50% weightage and the Term End Examination of Practical including viva-voce (external assessment) carries 50% weightage.

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## **3.0 PROCEDURE TO BE FOLLOWED BY ACADEMIC COUNSELLOR**

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### **For Experiments in Psychology**

- 1) Select any experiment from Experimental Psychology book based on the list of the practicals given above. You may refer to some of the books given as follows:
  - Experimental Psychology by L. Postman & J. P. Egan
  - Experiments in Psychology by S. M. Mohsin
  - Experimental Psychology with Advanced Experiments (2 Vols.) by M. Rajamanickam
- 2) Explain the experiment in detail to the learners.
- 3) Introduce the experiment in terms of:
  - Historical background
  - Hypothesis/es
  - Independent and dependent variables

- Control and experimental conditions
  - Administration
  - Scoring
- 4) After the introduction of the experiment, demonstrate to the learners how to conduct the experiment.
  - 5) The demonstration will include the following:
    - Preparation for the experiment, for instance, keeping the material (instrument/ apparatus, stimulus words/ list, stopwatch) ready.
    - Establishing rapport with the participant, making him/her feel comfortable
    - Explaining the experiment (procedure, time limit, precautions)
    - Taking informed consent for undergoing the experiment and informing the participant that the experiment findings will remain confidential.
    - Taking permission to record the session, wherever applicable.
    - Explaining the instructions to the learners.
    - Clearing all doubts in the mind of the participant about the experiment.
    - The experiment is conducted on the participant.
  - 6) Explain the scoring procedure to the learners.
  - 7) Explain how to discuss the data.
  - 8) Ask learners to conduct the experiment on each other in pairs and monitor the same.
  - 9) The learners will now conduct the experiment and do the scoring.
  - 10) The learners will have to write a report of the experiment in the practicum notebook which will be evaluated by the academic counsellors.

### **For Psychological Tests**

- 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. no. of items, dimensions, reliability, validity)
  - Administration
  - Scoring
  - Interpretation

- 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 subject 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 now administer, score and interpret.
- 10) The learners will have to write a report of the test in the practicum notebook which will be evaluated by the academic counsellors.

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## 4.0 IMPORTANT INFORMATION FOR THE LEARNER

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- 1) **Practicum Counselling Sessions:** You are advised to be in contact with your Study Centre with regard to schedule of counseling sessions for the Practicum Course. You may also visit the website of your Regional Centre, where the schedule of sessions is displayed. Unlike counseling sessions of other courses in the programme, the sessions organized for this course are mandatory. Thus, you should attend all the sessions and in these sessions your academic counselor will teach you how to conduct and administer experiments and tests. You will clarify all your doubts arising while pursuing this course from your academic counselor. There is weightage given to attendance in evaluation also (refer to evaluation scheme, under 'Evaluation').

The number of counselling sessions allocated for practicum course in MA Ist year is 08 sessions (01 session is of 03 Hours duration).
- 2) **Writing of Practicum Notebook:** As mentioned above, you will be conducting and administering experiments and test in the Practicum course. You will thus, record the procedure of at least five practical(s) in the practical notebook. The notebook should be



handwritten, in the format mentioned at point No.3, and checked by the academic counselor under whose guidance you have conducted practicals.

### 3) Format for Writing Practical Notebook

The academic counsellor will introduce the following format which you have to follow while preparing the practicum notebook.

- **Title:** This heading will mention the 'title' or 'name' of the practical e.g.: 16 PF / Span of attention.
- **Aims/ Objectives:** This will basically 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 subject using 16PF'.
- **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.
- **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, scoring.
- **Materials Required:** The materials required for the administration of the test/ experiment are 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 s/he was well informed about the details of the test/ experiment.

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

**Precautions:** Precautions, if any, to be considered while administration of the test/ experiment is 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.

- **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/experiment.

## References

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

### References (APA Style)

References have to be written in APA format. These should be alphabetically listed.

#### Books

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

#### Journal Article

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

#### 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.

#### Websites

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

- 4) You will keep the photocopy of the practicum notebook before submitting it at the study centre. Acknowledgement (Appendix 3) may also be taken while submitting the notebook.

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## 5.0 EVALUATION

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- 1) **Term End Examination (TEE) Form and Exam Fee:** You will have to deposit separate exam fee for the TEE of Practicum Course. The exam fee is Rs.200. Kindly check the latest fee amount applicable from [www.ignou.ac.in](http://www.ignou.ac.in), since it is subject to revision.
- 2) **TEE:** Total marks for Practicum Examination will be 100 marks (Internal assessment is 50 marks and External assessment is 50 Marks). Internal assessment refers to actual conduction of Practical and reporting them in the practical notebook in the prescribed format. External Assessment refers to conduction/ administration of Practicum on exam day and appearing in Viva- Voce. TEE for the course will be organized at the Study Center.

- 3) **Conduction of TEE:** You will conduct the practical and submit practicum notebook to the academic counsellor and get it corrected before the Practicum Term End Examination. You will bring notebook at the time of examination. The examination will be conducted at the respective study centers. The duration of the examination will be of 3 hours. During the examination, you will conduct the practical and submit the answer sheet. 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. 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 test administration or conduction of experiment is over.

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

#### Dates for Term End Examination of Practicum

Admission Cycle	Date Range for TEE of MPCL-007
July	1 <sup>st</sup> July to 14 <sup>th</sup> August
January	1 <sup>st</sup> January to 15 <sup>th</sup> February

**The dates for TEE of MPCL-007 will not appear in the date sheet provided by SED, IGNOU. For this, please contact your respective study center.**

- 4) **Passing Marks for Practicum:** Minimum passing marks in the course is 40. **There is no re-evaluation in TEE of Practicum.\***
- 5) **Scheme of Evaluation:** The following evaluation methodology is followed for TEE:

INTERNAL	Marks	Weightage	EXTERNAL	Marks	Weightage
Attendance	10	10%	Conduction	10	10%
Conduction	10	10%	Answer sheet	20	20%
Interpretation	10	10%	Viva Voce	20	20%
Practicum Notebook	20	20%			
<b>TOTAL</b>	<b>50</b>	<b>50%</b>	<b>TOTAL</b>	<b>50</b>	<b>50%</b>

**\*Learners who have taken admission in MAPC First Year in July 2021 and onwards need to secure a minimum of 40% separately in the internal and external evaluation.**

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## 6.0 A BRIEF GUIDE TO PRACTICALS

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1. **Bhatia Battery of Performance Test:** You have learned about the concept of Intelligence in the course MPC-001: Cognitive Psychology. 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 tell about the how and what type of mental ability a person possesses. But measuring something which cannot be directly observed, as with all psychological attributes, is really a very difficult task. And in case of intelligence, the task was more challenging. Since, measuring something requires a simple answer to what is being measured. The interesting thing about intelligence is that every test developed to measure it, defines the construct in its own way.

### **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, judgment 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 referred constitute 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). Binet and Simon assumed that intelligence grows with the child's chronological age (actual age). Thus, the child who passes all the items at the 7 year level is mentally 7 years of age irrespective of his or her chronological age (actual age) or we can say the child is able to do the test items that 50 to 75% of 7 year old children can pass. In Binet's view, 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. The items in the Binet's scale are arranged in increasing level difficulty.

The higher a child could go on the scale in answering the item, the higher his/her mental age will be. 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* as an index of intelligence. The term IQ, from the German *Intelligence 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):

$$IQ = \frac{MA}{CA} \times 100$$

IQ is calculated by dividing a child's mental age in months by his CA. An average child of 7 years whose MA is also 7 years, his IQ will be,  $\frac{84}{84} = 100$ . The number 100 is used as a

multiplier to eliminate the decimals. So, the IQ of this child will be 100. IQ in intelligence tests now is no longer calculated using this equation.

Tables are used to convert raw scores on the test into standard scores, which express the IQ. 1986 version of the test uses percentiles to express the level of intelligence in a particular group. The 1986 revision of the Stanford-Binet is grouped into four broad areas: verbal reasoning, abstract/visual reasoning, quantitative reasoning and STM. Terman chose the following category ranges for score levels on that test with standard deviation 16.

**Table 1: Terman's Stanford-Binet Fourth Revision Classification**

IQ Range ("Deviation IQ")	Intelligence Classification
164 and over	Genius or near genius
148 - 164	Very superior intelligence
132 - 148	Superior intelligence
113 - 132	Above average intelligence
84 - 113	Normal or average intelligence

68 - 84	Dullness
52 - 68	Borderline deficiency
Below 52	Definite feeble-mindedness

The above scores are obtained by converting raw scores into standard scores. Raw scores are the actual scores obtained on the test. These scores are converted by the tables which contain age appropriate standardized scores given in the manual.

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. Wechsler proposed different category ranges with a standard deviation of 15 by which I Q scores could be explained.

**Table 2: Wechsler's classification**

<b>IQ Range ("Deviation IQ")</b>	<b>Intelligence Classification</b>
145 and over	Very superior
130 - 145	Superior
115 - 130	Above average
85 - 115	Average
70 - 85	Below average
60 - 75	Borderline
60 and below	Defective

All 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 educated persons while non verbal tests

are preferred for uneducated persons, and participants with disability in some respect (like blind, partially sighted). 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.

**About the Test:** At present, many IQ tests have been developed to suit the cultural milieu of an individual. There are also culture fair tests that are applicable to all the persons irrespective of their culture. Culture-fair tests are free from any verbal content that measure culture specific and linguistic knowledge. Now, we will give you a brief introduction to Bhatia Battery of Performance Test that you are required to administer.

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 subject 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 numbers are repeated 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.

## 2. 16 Personality Factor:

In the course MPC-003: Personality: Theories and Assessment, you have learned the concept of personality, different theories of personality as well as various ways to measure the construct.

We are aware about the number of approaches and theories that have 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 characterisation 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:** 16 Personality Factor 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 4<sup>th</sup> 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:

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

- 3. Vineland Maturity Scale:** You learned about social competence in MPC-004: Advanced Social Psychology. Social maturity deals with learning to properly relate to acquaintances, friends and intimate relationships. It also involves understanding how to honor and respect those in authority; civil, parental, employer or spiritual. It is an indicator of the *life skills* a person possess for various situations. The World Health Organisation defines *life skills* as “abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life.” In primary and secondary education, *life skills* may refer to a skill set that accommodates more specific needs of modern industrialized life; examples include, food preparation, hygiene, basic literacy and

numeracy skills. These skills are a basic requirement for a happy and successful life. The adolescents and children are specifically checked for these skills for their better future in their personal and professional life. The level of social maturity also gives an indication of the dark aspects of parenting and schooling where some more sincere efforts are required from parents and teachers.

**About the Test:** The Vineland Social Maturity Scale was developed by the American psychologist Edger Arnold Doll (1953). The test measures communication skills, general self help ability, locomotion skills, occupation skills, self direction, self help eating, self help dressing, socialization skills.

The test is administered during an interview of the child with a parent or other person familiar with the person being assessed. It measures social competence, self-help skills, and adaptive behavior from infancy to eighteen years. It is used in planning for therapy and/or individualized instruction for persons intellectual disability or emotional disorders. The Vineland scale, which can be used from birth up to the age of 18, consists of a 89-items for interview with a parent or other primary caregiver. Personal and social skills are evaluated in the following areas: daily living skills (general self-help, eating, dressing); communication (listening, speaking, writing); motor skills (fine and gross, including locomotion); socialization (interpersonal relationships, play and leisure, and coping skills); occupational skills; and self-direction. The test is un-timed and takes 20-30 minutes. Raw scores are converted to an age equivalent score (expressed as social age) and a social quotient (SQ):

$$SQ = \frac{SA}{CA} \times 100$$

SA= Social Age; CA= Chronological Age or Actual Age, SQ= Social Quotient.

The test was adapted in Indian conditions by Dr A J Malin during his work at Nagpur guidance and Counselling centre.

4. **Family Pathology Scale:** You have learned about the impact of dysfunctional families in MPC-002: Life Span Development. As you are aware that the family is a primary social unit of every culture. In India, the family rather than the individual has been considered as the unit of social system. The Indian family reflects the socio- cultural fabric of Indian society, its philosophy and values (Sethi, 1989). The relationships within the family are complex, of varying degrees of intensity and myriad in nature. The emotional tone, which governs the relationship between any two persons, is continuously influenced in its course by emotional relationship of all others in the family. Children learn social skills by interacting with their parents and their care givers. Children tend to acquire emotional regulation and self-esteem & worth are fostered when there is harmonious interaction with the parents. Research have concluded that such skills are important for peer acceptance, social competence, and academic performance of the child. Family risk factors like, family dysfunction, conflict and dissatisfaction makes the child vulnerable to social and academic maladjustment.

**About the Test:** The scale is constructed by Vimala Veeraraghavan & Archana Dogra (2000). The family pathology scale indicates the extent to which maladaptive behavior is present

amongst the family members in their interaction with each other that is between spouses and between parents and children. A total of 100 items were prepared in the form of statements which had to be rated on a 3 point scale, with 1 indicating 'low/ no family pathology' ('Never' response), 2 indicating 'average family pathology' ('occasional' response) and 3 indicating 'high family pathology' (most often response). This scale consisting of 100 items was distributed to 25 clinical psychologists and 25 psychiatrists. The judges were asked to indicate as to what extent each item was indicative of family pathology on a three point scale, that is, "highly indicative", "somewhat indicative", and not at all indicative". Using the internal consistency method, only those items were chosen on which the rating was the same amongst all the 50 experts. Secondly the items, which were given a rating of 1 indicating poor family pathology, differed by two points from the item that was chosen as indicative of high family pathology. Only those items were selected and included in the final scale for family pathology, which met the above two criteria. Thus, there are 42 items in the scale to be responded by the participant with 'most often', 'occasionally' and 'never'. These were then administered to a group of 300 married couples from the normal population, (N= 600) and 100 couples from the psychiatric (pathological) population (N=200) and the reliability and validity were worked out.

**5. Sociometry:** You have learned about social interaction in MPC-004: Advanced Social Psychology. The practicum on sociometry is based on the technique of sociometry.

The word *sociometry* (coined by Jacob Levy Moreno, 1951) comes from the Latin "socius," meaning social and the Latin "metrum," meaning measure. The words therefore mean that sociometry is a way of measuring the degree of relatedness among people. Measuring the degree of relatedness or affiliation can not only help in evaluating the degree of cohesiveness amongst the members of the group, work teams, class or organisations, it may also help in bringing about positive change and required interventions. Sociometry also serves as a powerful tool in lessening the communication gap and reducing conflict by helping the group to analyse, examine and evaluate its own dynamics. It can also be helpful in finding out the relevant areas or group that requires therapy or training. It is a measure which helps in evaluating how individuals associate with each other when acting as a group toward a specified end or goal (Creswell in Moreno, 1960, p. 140). Moreno himself defined sociometry as "the mathematical study of psychological properties of populations, the experimental technique of and the results obtained by application of quantitative methods" (Moreno, 1953, pp. 15-16).

Sociometry can be used as a scale, with the help of which choices in forming interpersonal relationships of people. It is a technique of measurement in which at least (minimum) a group consisting of 5-6 members are asked to select or choose members of the same group based on a specific criteria, as for example everyone in the group can make choices and describe why the choices were made. From these choices a description emerges of the networks inside the group. With the help of these choices or preferences a drawing, like a map, of those networks called a *sociogram* is developed. The data for the sociogram may also be displayed as a table or matrix of each person's choices. Such a table is called a *sociometric matrix*. It is also important to understand the concepts of sociometric star, mutuals, cliques/chains, isolates, sociometric matrix, and sociogram, they are explained as follows:

- 1) **Sociometric Star:** Regardless of the criterion, the person whose name is selected by maximum members of the group is known as the *sociometric star* for that specific criterion.
- 2) **Mutuals:** where two people choose each other
- 3) **Chains or Cliques:** where person A chooses person B who chooses person C who chooses person D and so on
- 4) **Isolates:** the person who has not been chosen by any one within the group
- 5) **Sociogram:** With the help of the choices or preferences a drawing, like a map, of those networks called a *sociogram* is developed.
- 6) **Sociometric Matrix:** The data for the sociogram may also be displayed as a table or matrix of each person's choices. Such a table is called a *sociomatrix*.

The above concepts can be clearly understood with the help of an example. Let us assume that there is group of six members, namely, 'A', 'B', 'C', 'D', 'E' & 'F'. Each member will be asked to give their choices for a set of questions. The questions asked may be as follows:

- 1) Whom do you trust amongst the members of your group?
- 2) Whose advice would you like to take regarding serious matters of your life?
- 3) Who do you think can transmit messages accurately within your group?
- 4) Who would like to work with?
- 5) Who would you like to spend your leisure time with?
- 6) Who would you like to seek help from to generate creative ideas for your task?

The only requirement is that, the members are required to choose only one person for each question.

The sociometric matrix chart, sociogram, star, mutuals, isolates and cliques will be different for each question. Suppose the members have given their responses for the first (question no.-1) question. Let us say, the members have marked a '+' to indicate "High Trust", "M" to indicate "Moderate Trust", and "-" to indicate "Distrust/Conflict". Say for example, the member 'A' has been asked the question first and the following is his rating:

B +  
C -  
D M  
E M  
F +

This means that for the above question, 'A' highly trusts 'B', distrusts or is in conflict with 'C', has moderate trust on 'D', has moderate trust on 'E' and has high level of trust for 'F'. After obtaining the responses from everyone for the first question (Question No.-1), the next step is to prepare a sociomatrix from all the received responses which may be as following for the above example:

### Sociometric Chart for the Question No.- 1

	A	B	C	D	E	F
A	-----	M	+	M	+	M
B	+	-----	+	+	+	+
C	-	M	-----	-	-	-
D	M	M	+	-----	M	+
E	M	M	+	+	-----	+
F	+	+	M	+	M	-----

In the above, the first column shows the choice based ratings of 'A' for the other group members, the second row shows the ratings of 'B', third row is of 'C' and so on. The matrix clearly represents the extent to which the interpersonal relationships amongst the members of the group. The row which has a large number of '+' can be identified as the informal leader(s) of the group (member 'B' can be said to be an informal leader in the above example). Rows showing -'s can identify those people the group may be close to rejecting (member 'C' can be said to be as rejected or least trusted member in the above example). Columns showing all M's or all +'s may highlight those members who have a fear that their responses may be disclosed to others and therefore give moderate responses.

Another important pattern to look for is what is called mutuals. A mutual occurs when I rate you at the same level as you rate me. A positive mutual is when we both rate each other +; a negative mutual is when we both rate each other -. Positive mutuals show bonding in a group. Negative mutuals show areas of conflict. The identification of negative mutuals gives the consultant or therapist insight as to where to start to repair a dysfunctional group. Here are the column totals, and *mutuals* for our sample group:

### Mutuals for the Question No.- 1

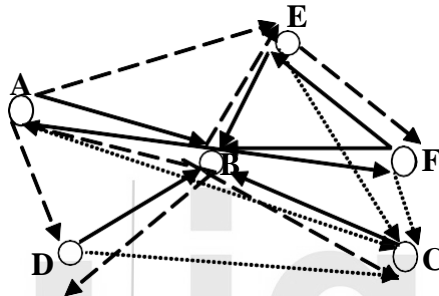
	A	B	C	D	E	F
Total +	2	5	0	2	3	3
Total M	3	0	1	3	2	2
Total -	0	0	4	0	0	0
Total choices received	5	5	5	5	5	5
No choices received	0	0	0	0	0	0
MUTUALS:						
Mutual +	0	1	0	1	0	2
Mutual M	1	0	0	1	0	0
Mutual -	0	0	0	0	0	0

The sociometric thus, highlights that, the member 'C' requires to work more upon its interpersonal relationship with the other members in order to bring a better team effort. Similarly, the data of

a sociomatrix can also be represented in a graphical form (called “sociogram”). The persons are represented in the form of small circles or bubbles. Say, if you are to prepare a sociogram for the above example, where the arrow  $\rightarrow$  indicates “high trust”, the arrow  $---\rightarrow$  indicates “moderate level of trust” and the arrow  $>$  indicates distrust or “conflict”.

Since, all the members have high trust for the person ‘B’, he is at the center as a sociometric star and the relationship of each member with each other has been indicated simultaneously. If there would have been an isolate in the above example, then no arrow would have been drawn for the concerned person.

### Sociogram for Question No. 1



The learners are required to prepare and work out the sociometric, sociogram, sociometric star, mutuals, cliques and isolates for all the rest of criterion based responses in a similar pattern

The following instructions should be given, “The following are some of the questions, on the basis of which you have to prepare a sociometric chart, sociogram and then you are required to find out the sociometric star, isolates, mutuals, and cliques for each of the following criteria You have to select only one person for each mentioned question”. Some of the questions are given below:

Whom in this room would you choose...

- 1) for advice on the best suited mobile phone for you?
- 2) to generate creative ideas for your tasks?
- 3) for support in taking risks?
- 4) to transmit messages accurately?
- 5) for help in dealing with a difficult situations?
- 6) to work with you?
- 7) to get reliable information on top management decisions?
- 8) to keep a confidence?
- 9) who would recognize your effort and your job?
- 10) who has shown the most growth in the past year?

On the basis of the responses of each member in the group, the learner has to find out the star, isolates, mutuals and cliques. He/ she has to then prepare a sociometric chart and sociogram.

## **6. Problem Behaviour Checklist**

The present test is based on problem behaviour of children that you have learned in the course MPC-002: Life Span Development. The problem behavior checklist is constructed by Vimla Veeraraghavan & Archana Dogra (2003) to identify the emotional and conduct problems of children. A total of 100 items were prepared in the form of symptoms which had to be rated on a three point scale, with 1,2, and 3 indicative of 'no', 'average' and 'high' problem behavior. As per ICD-10, specific diagnostic criteria were included separately for emotional, conduct and mixed disorders of conduct and emotions. These 100 items were given to 25 psychologist and 25 psychiatrists. Using the internal consistency method, only those items were chosen on which the rating was the same amongst all the 50 experts. Using this principle, 58 items were selected from a total of 100 items. Thus, there are 58 items in the scale to be responded by the parents with three response categories 'most often', 'occasionally' and 'never'. These were then administered to a group of 300 married couples from the normal population, (N= 600) and 100 couples from psychiatric (pathological) population (N=200) and the reliability and validity were worked out.

## **7. Span of Attention Experiment Perception**

You have learned about the concept of Perception in MPC-001: Cognitive Psychology. Perception is a cognitive process in which sensation is interpreted and organized in a meaningful way. 'Span of attention' or 'Span of perception' is used to refer the maximum number of simple objects correctly perceived in a single brief presentation (Woodworth & Schlosberg, 1954). Jevons (1871) pioneered work on this subject.

When the nature of various stimulus items presented randomly is the same, the maximum number of items or objects grasped by a person is called his span of attention. As gestalt psychologist have shown human minds tends to take things as a whole. Where it fails to apprehend the whole, it goes to parts rather smaller wholes. When we come across a word PSYCHOLOGY we usually have a glance of this letter grouping plus few initial letters and read the word. It is interesting to note that if any letter in the middle, say "o" is missing, still the word is correctly perceived. This overlooking of typographical errors is called proof reader's illusion.

Attention plays a important role in perception, cognition, and action, influencing the choices an individual make. The study of attention has been of interest to the field of psychology since its earliest days.

Wilhelm Wundt was one of the main persons to contribute to the study of attention. The relationship between attention and perception is one of the first topics to be studied in experimental psychology. Wundt held that attention was an inner activity that caused ideas to be present to differing degrees in consciousness. Wundt suggested that the focus of attention could narrow or widen. During late 19th century, Hermann von Helmholtz (1821-1894) argued that attention is necessary for visual perception. Using himself as a subject and pages of briefly visible printed letters as stimuli, he found that attention could be directed in advance of the stimulus presentation to a particular region of the page, even though the eyes were kept fixed at a central point. He also found that attention was limited. William James's in his book on Principles of Psychology (1890) described as taking possession by the mind, in clear and vivid form, of one of what seem several

simultaneously possible objects or trains of thought. The span of visual apprehension is measured with the help of an instrument known as tachistoscope. It is an apparatus designed for a brief presentation of the stimulus before the participant.

**About the Experiment:** You will conduct an experiment based on span of attention, using tachistoscope.

**8. Memory Experiment:** You must have understood the concept of Memory and types of memory in the course MPC-001: Cognitive Psychology.

Memory is an ability to store, retain, and recall information and experiences. In other words, it is also explained as the process of encoding, storage and retrieval of information. Encoding refers to transformation of information in form of codes Storage is the process of putting the coded information in to the memory and retrieval is the process of gaining access to the coded, stored information. There are three types of memory based on the process of collecting and storage of information, they are discussed as follows:

- **Sensory memory:** We receive several information from our environment through different sense organs (for example, visual, auditory etc.) at a particular time. For instance, while you are listening to the instructor, you are also looking at the instructor at the same time. We pay attention to some information and reject others. The duration of information held here is for few seconds.
- **Short term memory:** Once we pay attention to the selected information it is passed on to the short term memory. At this juncture the information received through sensory memory is held up to 30 seconds. The best example of this memory is the 'serial position effect'. If subjects are said to listen to certain words and then recall them instantly, it has been found that the subjects will recall those items which appeared at the end (which is known as *recency effect*) and the beginning (which is known as *primacy effect*) of the list, the items encountered most recently are remembered well.
- **Long term memory:** Some of the information reaching short term memory is processed by being rehearsed, that is, by having attention focused on it, perhaps by constantly repeating the words. The duration of information stored in long term memory can be for life time. The information processed and stored here is systematically organised.

In 1885, Ebbinghaus found that the effects of memory can be seen more pragmatically with the help of nonsense syllables (i.e., meaning less words like- mus, duv, tun). He found that if the participants are given to memorize a list of given words, and then asked to recall them after a certain time period, the participants could recall non sense syllables more effectively and quickly in comparison to the meaningful words. He was later on criticized by Bartlett (1932) who said that it is not only the non sense syllables, but the cognition, social and experimental environment which equally effects memory, so these aspects should also be taken care of while measuring memory. Several ways of measuring memory were developed later on. Today, one of the classic techniques of measuring memory is the experiments done with the help of memory drum. Memory drum is an apparatus which is cylindrical in shape and can be rotated clock wise. It is basically a mechanical device for the serial presentation of syllables or words for regulated periods and at regulated intervals.

**About the Experiment:** You will conduct any experiment, based on memory, using memory drum or any other instrument.



**TITLE PAGE FOR PRACTICUM NOTEBOOK**  
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**Course Code:** MPCL-007

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***CERTIFICATE***



This is to certify that Ms/ Mr. \_\_\_\_\_

of MA Psychology First Year has conducted and successfully completed the practical work in MPCL- 007 Practicum: Experimental Psychology and Psychological Testing.

**Signature of the Learner**

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## **ACKNOWLEDGEMENT**

This is to acknowledge that Ms./Mr. ....

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