

EXPERIMENTAL PSYCHOLOGY

Objectives :

1. Knowledge with Comprehension :

The Learner :

- i) Gives the brief history of experimental psychology.
- ii) States the different steps in experimentation.
- iii) Describes the method of experimentation Psychophysics.
- iv) Explains the nature of errors introduced in Psychological Psychophysical experiments and the measures for minimising them.
- v) Gives the general Physiology of sense organs.
- vi) Describes the experimental procedures for the study of Characteristics of the process of perception with the help of different organs.
- vii) Describes the characteristics of Psychological process involved in perception with the help of different sense organs.
- viii) Describes the characteristics of Psychological process involved in the perception of form, space time and movements.
- ix) Explains the methods to study the development of language in a child.
- x) Describes the nature of learning curve and its characteristics.
- xi) States the types of learning.
- xii) Explains the methods of experimental study of conditioning.
- xiii) Describes the methods of measuring retention.
- xiv) Describes the methods of experimental study of determinants of retention, interference and forgetting.
- xv) Describes the methods of measuring fatigue.
- xvi) Explains the methods of experimental study of fatigue.
- xvii) States the types and measures of reaction time.
- xviii) Explains the methods of experimental study of determinants of reaction time.
- xix) Explains the methods of experimental study of association formation.
- xx) Describes the experimental methods of study different types of thinking.
- xxi) Describes the experimental methods to study emotional and social behaviour of human beings.

2. Applications :

- The Learner :
1. Performs the Psychological experiments with proper material and apparatus.
 2. Records the procedure, conclusions and interpretations of the experiment systematically.

SYLLABUS

Unit 1 : Development of Experimental Psychology :

- 1.1 Brief history of experimental Psychology.
- 1.2 Meaning and Nature of experimental Psychology.
- 1.3 Steps in experimentation : Statement of the problem designing, performing, interpreting, concluding and reporting.

Unit 2 : Psycho-physics

- 2.1 Meaning
- 2.2 Problems in Psycho-physics
- 2.3 Methods in Psycho-physics
 - 2.3.1 Method in Limits.
 - 2.3.2 Method of Constant Stimuli
 - 2.3.3 Method of average error
- 2.4 Types of errors introduced in Psychophysical expts. and measures of minimising them.

Unit 3 : Sensations :

- 3.1 General study of physiology of different sense organs.
- 3.2 Psychological study of sense organs.
 - 3.2.1 Vision : Types : scotopic and photopic
 - Process of light and dark adaptation
 - Blind spot
 - Characteristics of chromatic and achromatic vision.
 - Colour theories - Young Helmholtz's and Herring's
 - 3.2.2 Audition acuity
Theories of hearing - Resonance, frequency and volley.
 - 3.2.3 Experimental study of chemical sensation. Olfactory and gustatory.
 - 3.2.4 Cutaneous sensation : heat, cold, pain and pressure spots.

Unit 4 : Perception and Language Development

- 4.1 Perception of form, space, time and movement
- 4.2 Illusion
- 4.3 Experimental study of concept formation and language development in a child.

Unit 5 : Learning

- 5.1 Measurement, learning curve and its characteristics
- 5.2 Types - Motor, Verbal and problem solving
- 5.3 Experimental study of conditioning
- 5.4 Experimental design for the study of transfer of learning.

Unit 6 : Retention and Forgetting

- 6.1 Measurement of retention
- 6.2 Experimental study of determinants of retention
- 6.3 Experimental study of Interference and forgetting

Unit 7 : Work and Fatigue

- 7.1 Measurement of fatigue, work curve and its characteristics.
- 7.2 Experimental study of determinants of fatigue, ergography.

Unit 8 : Reaction time and association

- 8.1 Types and measures of reaction time
- 8.2 Experimental study of determinants of reaction time.
- 8.3 Experimental study of speed and variations in association formation.

Unit 9 : Human Behaviour

- 9.1 Experimental study of thinking, reasoning and problem solving
- 9.2 Experimental study of emotional behaviour.
- 9.3 Experimental study of Social behaviour.

Practical Work :

Each candidate is expected to perform a minimum 20 Psychology experiments from the list given. A journal is to be maintained by the candidate, for recording the complete procedure of the experiment.

Reference Books :

1. Mary Collins & Charles Brewer : Experimental psychology
Layall Book Depot., Ludhiana
2. Postman Leo & Egan James : Experimental Psychology
Kalyani Publishers . New Delhi
3. Bugelski B.H. : Experiments. Psychology
Holt, Rinehart, Winston, New York
4. Hering E.H. : A History of Experimental Psychology
The Times of India Press, Bombay
5. Andrea E. G. : Experimental Psychology
Wiley Eastern Pvt. Ltd., New Delhi
6. Underwood B.J. : Experimental Psychology
The Times of India Press, Bombay.
7. Valentine C.W. : An Introduction to Experimental Psychology
University Tutorial Press Ltd., New Oxford.
8. Kothurkar V. K. & Vanarase S.J. : Experimental Psychology - A systematic
Introduction. : Wiley Eastern Ltd., New Delhi.
9. Kohsin S.M. : Experiments in Psychology
Orient Longman, Ltd. Bombay
10. Paradeshwaran E.G. & Rao S.T. : A Manual of Experimental Psychology
Lalwani Publishing House, Bombay
11. Kuppai Swami B. : Elementary experiments in Psychology
Geoffrey . Madras.
12. Munz N.L. : A Laboratory Manual in General Experimental
Psychology ; Houghton Mifflin Company, Cambridge

Unit	Topic		Object of the experiment
1. Psychophysical methods.	Method of limits	i)	To calculate the threshold using the method of limits.
	Method of right & wrong cases	ii)	To determine the differential threshold by using the method of right & wrong cases.
	Method of Mean error.	iii)	To calculate the space error by using the method of mean error.
2. Sensation	Vision : Mapping the Blind spot	iv)	To map the area of the blind spot.
	Vision : Contrast effect	v)	To study the phenomenon of successive colour contrast.
		vi)	To study the phenomenon of simultaneous colour contrast.
		vii)	To map the rational fields of vision for different colours.
	Field of vision	viii)	To verify the laws of colour mixing.
	Vision - Colour mixing	ix)	To determine the subjects order of colour preference.
	Vision - order of colour preference.	x)	To detect the presence of colour blindness
	Vision-colour blindness	xi)	To determine the absolute threshold for sound intensity
	Auditory sensation		To determine the accuracy of localisation of sounds at different position in the horizontal, coronal and sagittal planes.
	3. Sensations	Cutaneous sensation	xiii)
xiv)			To map the pain & touch spots on the limited area of the skin of the subject.
xv)			To determine the special threshold or the aesthesiometric index.
Kinaesthetic sensation perception of movement		xvi)	To estimate the successive simultaneous movements of the individual.
Perception Concept formation		Perception of form Concept formation	xvii)
	xviii)		To study the process of concept formation.
Learning	Bilateral Transfer	xix)	To study the effect of bilateral Transfer.
	Interference	xx)	To study the effect of interference in learning.
	Maze learning	xxi)	To measure the process of learning in unseen stylus mazes & to discover & compare the method employed.

Retention and forgetting	Retention	xviii) To compare the efficiency of retention by the measures recall and recognition.
Work and fatigue	Fatigue	xxiii) To prepare and study the stages of work curve.
Reaction time & association	Reaction Time	xxiv) To measure the simple reaction time. discriminatory time for visual & auditory stimuli.
	Association	xxv) To study the individual differences in association formation.
Human Behaviour	Thinking	xxvi) To measure the individual capacity at the time of the test, for abstract & clear thinking.
	Intelligence	xxvii) To judge intelligence from photographs.
		xxviii) To study a performance test of intelligence.
	Emotional behaviour	xxix) To judge emotions from photographs.
	Problem solving in group situation	xxx) To compare the problems solving behaviour of subjects working alone & in a group situation.
