

Ch. Bansi Lal University, Bhiwani



**Examination Scheme
&
Syllabi
for
M.Sc- Psychology
(SEMESTER- I to IV)
(2016-2017)**

Scheme of Examination for Master of Science in Psychology**Semester-I****Credits= 33****Total Marks = 700**

Paper Code	Subjects	Type of Course	Contact Hours Per Week			Credit			Examination Scheme			Total
			Theory	Practical	Total	Theory	Practical	Total	Theory	Internal Assessment	Practical	
PSY101	History and Theoretical Foundation	F.C.	04	--	04	04	--	04	80	20	--	100
PSY102	Research Methodology and Statistics -I	I.D.C.	04	--	04	04	--	04	80	20	--	100
PSY103	Biopsychology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY104	Cognitive Psychology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY105	Social Psychology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY106	Computer Applications in Psychology	I.D.C.	01	02	03	01	01	02	25	--	25	50
PSY107	Practicum:(i) Psychological Experiments		--	18(3x6)	18	--	09	09	--		50	50
PSY108	(ii) Psychological Test		--			--			--		50	
PSY109	Seminar/Journal Club		--	--	--	--		01				25
PSY110	Self Study (Personality)		--	--	--	--		01				25
Total			21	20	41	21	10	33	425	100	125	700

F.C = Foundation Course**C.C. = Core Course****I.D.C.= Inter Disciplinary Course**

Scheme of Examination for M.Sc- Psychology**Semester-II****Credits= 35****Total Marks = 750**

Paper Code	Subjects	Type of Course	Contact Hours Per Week			Credit			Examination Scheme			Total
			Theory	Practical	Total	Theory	Practical	Total	Theory	Internal Assessment	Practical	
PSY201	Developmental Psychology : Life Span Perspectives	C.C.	04	--	04	04	--	04	80	20	--	100
PSY202	Research Methodology and Statistics-II	I.D.C.	04	--	04	04	--	04	80	20	--	100
PSY203	Neuropsychology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY204	Emotion and Motivation	C.C.	04	--	04	04	--	04	80	20	--	100
PSY205	Psychopathology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY206	Environmental Studies: Psychological Perspectives	I.D.C.	02	--	02	02	--	02	40	10	--	50
PSY207	Communication Skills	C.M.C.	02	--	02	02	-	02	40	10	--	50
PSY208	Practicum: (i) Neuro, Emotion and Motivation		--	18(3x6)	18	--	09	09	--	50	50	
PSY209	Practicum: (ii) Psychopathology and Developmental Psychology		--			--						
PSY210	Seminar/Journal Club		--	--	--	--		01			25	
PSY-211	Self Study (Intelligence)		--	--	--	--		01			25	
Total			24	18	42	24	09	35	480	120	100	750

C.C. = Core Course**I.D.C.= Inter Disciplinary Course****C.M.C = Complimentary Course**

Scheme of Examination for Master of Science in Psychology

Semester-III

Credits= 29

Total Marks = 700

Paper Code	Subjects	Type of Course	Contact Hours Per Week			Credit			Examination Scheme			Total
			Theory	Practical	Total	Theory	Practical	Total	Theory	Internal Assessment	Practical	
PSY301	Clinical Psychology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY302	Health Psychology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY303	Industrial and Organizational Psychology-I	E.C.	04	--	04	04	--	04	80	20	--	100
PSY304	Psychometrics	E.C.	04	--	04	04	--	04	80	20	--	100
PSY305	Criminal Behaviour & Forensic Psychology	E.C.	04	--	04	04	--	04	80	20	--	100
PSY306	Practicum: (i)Clinical, Health, Industrial- Organizational Psychology, Psychometrics and Criminal Behaviour		--	12(4x3)	12	--	06	06	--	--	100	100
PSY307	(ii) Field/Case Study			02	02	--	01	01	--		50	50
PSY308	Seminar/Journal Club		--	--	--	--		01				25
PSY309	Self Study (Community Psychology)		--	--	--	--		01				25
Total			20	14	34	20	07	29	400	100	150	700

C.C. = Core Course

E.C. = Elective Course

Scheme of Examination for Master of Science in Psychology

Semester-IV

Credits= 29

Total Marks = 700

Paper Code	Subjects	Type of Course	Contact Hours Per Week			Credit			Examination Scheme			Total
			Theory	Practical	Total	Theory	Practical	Total	Theory	Internal Assessment	Practical	
PSY401	Neurocognitive Disorders	C.C.	04	--	04	04	--	04	80	20	--	100
PSY402	Counselling Psychology	C.C.	04	--	04	04	--	04	80	20	--	100
PSY403	Industrial and Organizational Psychology-II	E.C.	04	--	04	04	--	04	80	20	--	100
PSY404	Rehabilitation Psychology	E.C.	04	--	04	04	--	04	80	20	--	100
PSY405	Psychoinformatics	I.D.C.	04	--	04	04	--	04	80	20	--	100
PSY406	Practicum (i) Counselling Psychology, Rehabilitation Psychology (ii) Profiling of Tests and Instruments		--	12(4x3)	12	--	06	06	--	--	100	100
PSY407	Project Work			02	02	--	01	01	--		50	50
PSY408	Seminar/Journal Club		--	--	--	--		01				25
PSY409	Self Study (Forensic Psychology)		--	--	--	--		01				25
Total			20	14	34	20	07	29	400	100	150	700

C.C. = Core Course

I.D.C.= Inter Disciplinary Course

E.C. = Elective Course

Duration = 2 Years (4 Semesters)

Total Marks = 2850

Total Credits = 126

M.Sc- Psychology

General Instructions

1. Seminar/ Journal Club

Max.Marks-25

Every candidate will have to deliver a seminar of 30 minutes duration on a topic (not from the syllabus) which will be chosen by him / her in consultation with the teacher of the department. The seminar will be delivered before the students and teachers of the department. A three member committee (one coordinator and two teachers of the department of different branches) duly approved by the departmental council will be constituted to evaluate the seminar. The following factors will be taken into consideration while evaluating the candidate. Distribution of marks will be as follows:

- | | |
|--------------------------------|----------|
| 1. Presentation | 10 marks |
| 2. Depth of the subject matter | 10 marks |
| 3. Answers to the questions | 05 marks |

2. Self Study Paper

Max.Marks-25

Objective: This course intends to create habits of reading books and to develop writing skills in a manner of creativity and originality. The students are to emphasis his/her own ideas/words which he/she has learnt from different books, journals and newspapers and deliberate the same by adopting different ways of communication techniques and adopting time scheduling techniques in their respective fields. This course aims:

- To motivate the students for innovative, research and analytical work
- To inculcate the habit of self study and comprehension
- To infuse the sense of historical back ground of the problems
- To assess intensity of originality and creativity of the students

Students are guided to select topic of their own interest in the given area in consultation with their teachers/Incharge/Resource Person.

Instructions for Students

1. Choose the topic of your interest in the given areas and if necessary, seek the help of your teacher.
2. Select a suitable title for your paper.
3. You are expected to be creative and original in your approach.
4. Submit your paper in two typed copies of A4 size 5-6 pages (both sides in 1.5 line spaces in Times New Roman Font size 12).
5. Organize your paper in three broad steps:

- (a) Introductions
- (b) Main Body
- (c) Conclusion
- 6. Use headings and sub-headings
- 7. Use graphics wherever necessary
- 8. Give a list of books/references cited/used
- 9. The external examiner will evaluate the self-study paper in two ways i.e. Evaluation 15 Marks and Viva-Voce 10 marks.

Distribution of Marks

- | | |
|--|-------------------|
| 1. The evaluation is divided into different segment as under : | 15 Marks |
| (i) Selection of Topic | - 3 Marks |
| (ii) Logical Organization of subject matter | - 5 Marks |
| (iii) Conclusions | - 5 Marks |
| (iv) References | - 2 Marks |
| 2. Viva-Voce: | - 10 Marks |

The external examiner will hold Viva-Voce based on contents of the student's Self Study Paper focusing upon the description by the Candidate.

**M.Sc.- Psychology
Semester- I**

PSY-101

History and Theoretical Foundation

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 hrs

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit-I

Emergence of Psychology as Science of behaviour; Mind-Body-Behavior issue.

Schools of Psychology: Structuralism; Functionalism; Psychoanalysis: Freudian and Neo-Freudian (Karen, Horney & Erich Fromm).

Unit-II

Individual Psychology; Analytical Psychology; Behaviorism (John.B.Watson); Gestalt Psychology; Humanistic-Existential Psychology (Carl Rogers, Abraham Maslow and Rollo May).

Unit-III

Theories of Learning: Classical Conditioning, Instrumental Conditioning, Tolman's Cognitive Theory, Social Learning Theory.

Intelligence Theories: Thrustone's Theory of Intelligence, Gardner's Theory of multiple intelligence, Sternberg's Triarchic theory, Three stratum theory of intelligence; Emotional Intelligence: Concept and theory.

Unit-IV

Personality Theories: R. B. Cattell, H. J. Eysenck, Big Five Factor model, Erikson, Walter Mischel.

An overview of Psychology in India: Eastern models with reference to Indian thoughts: In Ancient and Modern time; Current trends of Psychology and Contemporary issues.

Suggested Readings:

1. Brenman, J. F. (2004). History and Systems of Psychology (6th Ed). Delhi. Pearson Pub.
2. Cornelissen, M; Mishra, G & Verma, S. (2013) Foundations of Indian Psychology. New Delhi; Pearson Education.
3. Dalal, A.K. & Mishra, G (Ed). New Direction in Indian Psychology, vol-1, New Delhi: SAGE Publication.
4. Goleman, D. (1996) Emotional Intelligence, New York. Bantan Books.
5. Hall, C & Lindzey, G. (1978). Theories of Personality, New York: John Willey & Sons.
6. HillGard, E.R. & Bower, G.H. (1975). Theories of Learning. New Jersey; Prentice Hall
7. Leahey, T.H. (1987) A History of Psychology, U.S.A.: Prentice Hall International.
8. Schultz, D. and Schultz, S. (2000). A History of Modern Psychology. U.S.A.: Harcourt Brace & Co.
9. Shiraev, E. (2015). A History of Psychology- A Global Perspective. New Delhi. SAGE Publication Ltd.
10. Singh, A.k. (2013). The comprehensive History of Psychology (6th ed) .New Delhi: MLBD.
11. Viney, W. and King, D. (1998) History of Psychology. Boston: Allyn and Bacon.

**M.Sc.- Psychology
Semester- I**

PSY-102

Research Methodology and Statistics-I

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Max. Time: 3 hrs.

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit-I

Research: History of scientific research in Psychology, Univariate v/s Multivariate Approach; Types of Research: Experimental, Quasi Experimental, Ex-post-Facto, Field studies, Survey research; Qualitative research, Grounded Theory.

Probability Theory: The Concept of Probability; laws of Probability.

Unit-II

Normal Probability Curve (NPC): Basic principles, Characteristics and Applications of NPC, Standard Scores: z-score; Normalised Standard Scores.

Basic idea of measures of Central Tendency (mean, Median, Mode, Quartiles and Percentiles) and Measures of Dispersion (Range, Variance, Standard Deviation)

Moments, Skewness and Kurtosis.

Unit-III

Problem and Hypothesis: Characteristics, formulation, Sources of research problem: Nature and Characteristics of hypothesis, Types and formulation of hypothesis, Relevance of Problem and Hypothesis, Variables: Types, Control of relevant variables, Significance of mean difference: t-test, Chi-square and f-test.

Unit-IV

Correlation: Properties, Methods: Pearson's Product Moment, Partial Correlation and Spearman's Rank difference (Biserial, Point Biserial, Phi coefficient) and Simple Linear Regression (bivariate).

Suggested Readings:

1. Aron, A., Aron, E.N. and Coups, E.J. (2007) *Statistics for Psychology*. Delhi: Pearson Education.
2. Broota, K.D. (1992) *Experimental Designs in Behavioural Research*. New Delhi: Willey Eastem.
3. Evans, A. N. & Rooney, B. J. (2008). *Methods in psychological research*. New Delhi, Sage publications.
4. Evans, A. N. & Rooney, B. J. (2011). *Methods in psychological research*, 2nd edition. New Delhi, Sage publications. Garrett, H.E. (2005-12th Indian Reprint) *Statistics in Psychology and Education*. Delhi: Paragon International Publishers.
5. Gavin, H. (2008). *Understanding research h methods and statistics in psychology*. New Delhi, Sage publications.
6. Gliner, J. A., Morgan, G. A. & Leech, N. L. (2009). *Research methods in applied settings: An integrated approach to design and analysis*, 2nd edition. New York, USA, Routledge.
7. Guthrie, G. (2010). *Basic research methods: An entry to social science research*. New Delhi, Sage publications.
8. Helode, R. D. (2012). *Basics of research in behavioural sciences*. Wardha, Psychoscan.
9. Howitt, D and Cramer, D (2000) *An Introduction to statistics in Psychology*. London : Pearson Education.
10. Husain, A. (2012). *Psychological testing*. New Delhi, Pearson publications.
11. Kerlinger, N. (1996). *Foundation of Behavioural Research*. India. Prentice Hall.
12. Kothari, C.R. *Research Methodology*. New Delhi. Willy Eastern Ltd.
13. Minium, E.W, King, B.M. and Bears, G. (1993) *Statistical Reasoning in Psychology and Education*. New York: John-Wiley & Sons Inc. Mitchell, M. L. & Jalley J. M. (2010). *Research design – Explained*, 7th edition. Belmont, USA, Wodsworth, Wodsworth cengage learning.
14. Weathington, B. L., Cunningham, C. J. L. & Pittenger, D. J. (2010). *Research methods for behavioural and social sciences*. Hoboken, New Jersey, Wiley publications.

**M.Sc.- Psychology
Semester- I**

PSY-103

Biopsychology

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Max. Time: 3 hrs.

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit-I

Biopsychology: Nature and approaches of Biopsychology.

Biological Basis of Behaviour; Evolution of Brain and Behaviour, Genetic Constitutents, Genetic Mutation.

Unit-II

Neuron: Structure, Types and functions; Electrical Properties of neuron (Signal generation and Propagation), Types of Glia on the basis of their structure and functions (Astrocytes, Oligodendrocytes, Microglia and Schwann Cells, Neural Conduction, Synaptic Conduction, Types of Synapses, Neuro-transmitters, Neuro-chemical & Cerebral circulation system.

Unit-III

Nervous System: Basic features, Central Nervous System (Brain: Fore brain, Mid Brain & Hind Brain and Spinal cord), Peripheral Nervous System: Cranial Nerves and Spinal Nerves, Autonomic Nervous System.

Unit-IV

The Anatomy and Physiology of Sensory Systems: Vision and Audition. Muscles: Types, Structure & Physiology of Contraction, Neural aspect of muscle movement: The Pyramidal and Extra Pyramidal System; Endocrine Glands.

Suggested Readings:

1. Bolles, F., & Grafman, J. (1988). Handbook of Neuropsychology. New York: Elsevier.
2. Carlson, Neil R. (2005). Foundations of Physiological Psychology. (6th Ed. LPE), New Delhi: Pearsons – Education.
3. Carlson, Neil R. (2005) Foundations of Physiological Psychology, 6th ed. Pearson Education and Dorling Kindersley (India): New Delhi.
4. Dimond, S.J. (1980). Neuropsychology: A textbook of systems and psychological functions of the human brain. Butter worths: London- Boston .
5. Figser, S.B., & Boll, T.J. (1981). Handbook of Clinical Neuropsychology. New York: Wiley- Intarscience.
6. Filskov, S.B., & Boll, T.J., (1981). Handbook of Clinical Neuropsychology. New York: John Wiley.
7. Freeman, W.H. - Walsh, K. (1994). Neuropsychology: A Clinical Approach. New Delhi: Churchill Livingstone.
8. Goldstein, G., & Hersen, M. (1984). Handbook of Psychological Assessment. New York: Pergamon.
9. Gazzaniga, M.S. Lvry, R.B. and Mangun, G.R.(2002) Cognitive Neuroscience : The Biology of the mind 2nd Edition. New York :W.W. Norton & Company, Inc.
10. Grahm, R.B., (1990). Physiological Psychology. California: Wadsworth.
11. Graham, R.B. (1990) Physiological Psychology. California: Wadsworth.
12. Hersen , M., Kazdin, A.E., & Bellack A.S. (1991). The Clinical Psychology Handbook . New York: Pergamon.
13. Jarvis, P.E., & Jeffery, T. Barth (1994). Halstead- Reitan Neuropsychological Test Battery: A Guide to Interpretation and Clinical Application. Aorida: Psychology Assessment Resources Inc.
14. Kalat, J.N. (2001) Biological Psychology. California: Wadsworth.
15. Kolb, B., & Whisaw, I.Q. (1990). Fundamentals of Human Neuropsychology. New York:
16. Levinthal, C.R. (1991) Introduction to Physiological Psychology. New Jersey: Prentice Hall. Pinel, John P.J. (2006) Biopsychology 6th ed. Pearson Education Inc. and Dorling Kindersley (India): New Delhi.
17. Rosenzweig, M.R., Liemen, A.L. and Breed love, S.M. (1999) Biological Psychology: An Introduction to Behavioural, Cognitive and Clinical Neuro Science. 2nd edition Massachusetts: Sinauer.
18. Singh, I.B. (1982) A Text Book of Human Neuroanatomy. Delhi: Vikas.
19. Zillmer, E.A., Spiers M. V.,& Culbertson, W.C. (2008). Principles of Neuropsychology. Stanford: Wadsworth Thomson.

**M.Sc.- Psychology
Semester- I**

PSY-104

Cognitive Psychology

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Max. Time: 3 hrs.

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Cognitive Psychology: Emergence and Current Status of cognitive psychology

Perception: Theories and Approaches to study perception; Physiological and Information Processing; Perceptual Constancy: Size, Shape, and Brightness; Perception of depth, time and movement. Cognitive and motivational influences on perception (mental set & Instruction, target identification & perceptual defense); cultural determinants of perception; Illusions: Types, causes, theories and current development.

Unit-II

Attention: Concept, mechanism, Types and Theories: Bottleneck Theories, Capacity Theories, Automaticity; Attention and Arousal; Attention training; Attention Deficit Hyper Disorder (ADHD); Cultural factors and selective attention.

Language: Theories of Language acquisition, Development and use of language; Bilingualism and Multilingualism; language and thought; language perception.

Unit-III

Memory and Forgetting: Processing and stages of memory; Models of memory: Level of processing, Working memory and Monohierarchical model.

Semantic Memory: Feature comparison model, Hierarchical organization model, ACT model, HAM model, Spreading Activation model; Strategies for memory improvement (e.g. Mnemonics); Eyewitness Testimony. Ebbinghaus's work in forgetting; Zeigarnik Effect & Jost's Law.

Unit-IV

Thinking: Nature and types of thinking, Theories of thinking, Characteristics of creative thinkers; Concept formation: Theories of concept formation, factors and experimental studies.

Problem Solving: Greeno's classification of problem solving, Strategies for effective problem solving, Impediments of problem solving (e.g. Effect of set in problem solving).

Suggested Readings:

1. Dodd, D.H. and White, R.H. (1980) Cognition: Mental Structures and Processes. Boston: Allyn and Bacon.
2. Eysenck, W.M. and Keane, M.T. (1990). Cognitive Psychology A Students Handbook. London: Lawrence Erlbaum.
3. Goldstein, E.B. (2002) Sensation and Perception, California: Wadsworth.
4. Jahnke, J.C. and Nowaczyk, R.H. (1998). Cognition. New Jersey: Prentice Hall.
5. John,A.S & Proctor.R(2004)Attention Theory and Practice. New Dehli. SAGE Publication.
6. Matlin, M.W. (1995) Cognition. Bangalore: Prism Book.
7. Median, D.L., Ross, B.H. and Markman, A.B. (2005) Cognitive Psychology. USA, Johan Wiley.
8. Reed, S.K. (2004) Cognition; Theory and Applications. California: Wadsworth.
9. Riegler,B.R. & Riegler,G.L.R.(2008).) Cognitive Psychology. NewDelhi : Pearson
10. Solso, R.L. (2004) Cognitive Psychology. Delhi : Pearson
11. Woodworth,R.S & Scholsberg(1981) Experimental Psychology. New Dehli. Tata Mcgraw Hill co.ltd.

**M.Sc.- Psychology
Semester- I**

**PSY-105
Social Psychology**

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 hrs

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Social Psychology: Its Nature and theoretical foundations; The self: Development, Social self, self esteem, Self efficacy, Self and culture.

Socialization: Nature, process and agencies of socialization; Theories of Socialization.

Unit-II

Group Dynamics: Structure, function and types of Groups; Group Norms: formation, status, role, and role conflict.

Social Conformity and Social Facilitation; Leadership: Determinants of leadership, leadership styles and theories.

Unit-III

Attribution Process: Theories of Causal Attribution: Heider's theory, Jones and Davis theory, Kelley's co-variation theory, Weiner's model; Attributional Biases, Altruism and pro-social Behavior: Concept, Theoretical perspective; Role of personality traits in altruism; socializing altruism.

Unit-IV

Aggression: Nature and theories of aggression; Factors Influencing on aggression (aversive incidents, arousal, the media and the group context)

Conflict: Nature and theories of conflict, conflict management and resolution- An Indian model; Socio-demographic and Cultural Diversity (Gender, ethnic, cultural, caste and class).

Suggested Readings:

1. Baron, R.A., & Byrne, D., (2005). *Social Psychology* (9th Ed.). Hindi Translation. New Delhi : Pearson Education.
2. Baron, R.A., Byrne, D., & Johnson, B.T (1998). *Exploring Social Psychology*. Boston : Allyn & Bacon.
3. Baron, R.A., & Byrne, D. (2005). *Social Psychology*. New Delhi: Pearson Education. Crisp, R. J., & Turner, R. N. (2010). *Essential Social Psychology*. London : Sage.
4. Burger, J. M. (2004). *Personality* (6th Ed.). USA : Thomson Wadsworth.
5. Carver, C. S., & Scheier M.F. (1996). *Perspectives on Personality*. Boston : Allyn and Bacon.
6. Crisp, R.J. & Turner, R.N. (2014) *Essential Social Psychology* (3rd ed). New Delhi. SAGE Publication.
7. Fiske, S.T. & Taylor, S.E. (2013). *Social Cognition: From Brain to Culture*. New Delhi. SAGE Publication.
8. Frager, R., & Fadiman, J. (1998). *Personality and Personal Growth* (4th Ed.). New York : Longman (Chapters -15, 16 & 17 only).
9. Friedman, H.S., & Schustack, W. (2003). *Personality : Clasical Theories and Modern Research* (2nd Ed.). New Delhi : Pearson Education.
10. Hall, C. S., Lindzey, G., & Campbell. (1998). *Theories of Personality*. New York: John Wiley and Sons.
11. Misra, G., & Mohanty, A.K. (2002). *Personality on Indigenous Psychology*. New Delhi: Concept Publishing Company.
12. Myers, David. G.(2007) *Social Psychology* 8th ed. Tata McGraw Hill, New Delhi.
13. Sanderson, C.A. (2010). *Social Psychology*. USA: John Wiley and Sons.
14. Schneider, F.W, Gruma, J.A. & Coutts, L.A. (2012). *Social Cognition*. New Delhi. SAGE Publication.
15. Singh, A.K. (2010). *An Outline of Social Psychology*. Delhi : Moti Lal Banarsidas.
16. Sharma, R.K. & Sharma, R. (2013) *Samaj Manovigyan*. New Delhi. Atlantic Publication Pvt. Ltd.
17. Worchel, S.W., Cooper, J. Goethals, G.R., & Olson, J.M. (2000). *Social Psychology*. London: Wadsworth.

**M.Sc.- Psychology
Semester- I**

PSY-106

Computer Applications in Psychology

Maximum Marks: 25
Time: 1 hr.

Note: *There shall be seven questions in all. Question no. 1 shall be compulsory, consisting of seven short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit.*

Unit-I

Computer System as Information Processing System; Hardware options: CPU, Input devices, Output devices and Storage devices; PC as a virtual office.

Modern Information Technology: Basic idea of Local Area Networks (LAN), Wide Area Network (WAN), E-mail, Internet Technologies, Concept of world wide web and Internet browsing.

Unit-II

MS Office- Introduction to MS WORD, Word basic commands, Introduction to mail merge; Introduction to Excel, Working with Excel- Formatting, Working with graphics in excel; Introduction to Power Point: Power Point basics, working with graphics in Power Point.

Unit-III

Introduction to Statistical Packages: Usage of SPSS for Descriptive statistics, Correlation, Multiple regression, Factor Analysis, Analysis of Variance; Graphical representation.

Suggested Readings:

1. Lambert, Joan and Cox, Joyce, "Microsoft Office Professional 2010 step by step".
2. Rajaraman, V., "Fundamental of Computers", 5th Edition, PHI Learning Pvt. Ltd., 2013.
3. Sinha, Pradeep K., Sinha, Preeti, "Computer Fundamentals", fourth edition.

**M.Sc.- Psychology
Semester- I**

PSY-106: PRACTICUM

Computer Applications in Psychology

Maximum Marks: 25
Time: 2 hr.

Note: Each student would submit a record file containing a report of all Computer Applications. Computer application file duly signed by the respective teacher. During examination one part from computer application would be conducted. Evaluation would be based on performance in conduct/ procedure, written report and viva-voce.

1. Layout of Data-Sheet/Data-Entry in SPSS.
2. Central Tendencies
3. Variability
4. Correlation
5. Mean Comparisons
6. Graphical representation
7. PPT on any topic related to syllabus.

M.Sc.- Psychology
Semester- I

PSY-107: PRACTICUM
Psychological Experiments

Maximum Marks: 50

Time: 2 Hrs

Note: *Each student would perform five experiments and tests from the areas mentioned below. The list of exact problems would be decided by the concerned supervisor and approved by the Departmental Committee in the beginning of each semester.*

Each student would submit a record file containing a report of all tests, experiments, duly signed by the respective supervisor. During examination one experiment and one test would be conducted. Evaluation would be based on performance in conduct/ procedure, written report and viva-voce.

1. Any four experiments from following areas:
 - (i) Simple/Choice Reaction Time
 - (ii) Conformity
 - (iii) Conditioning
 - (iv) Perception
 - (v) Attention
 - (vi) Memory
 - (vii) Sound Localization
 - (viii) Problem Solving
 - (ix) Critical Flicker Fusion
 - (x) Visual Acuity Test

2. Study of gross anatomy and pre-dissected Human Brain
 - (i) Temporary Mount of Vertebrate muscle
 - (ii) Study of cells of nervous system using microscope
 - (iii) Study of permanent slides of Histology of nervous system.
 - (iv) Whole mount of neuron, medullary and non-medullary fibres.

Distribution of Marks

Record Book (Internal)	Procedure & Report	Viva- Voce	Total
10	20	20	50

M.Sc.- Psychology
Semester- I

PSY-108: PRACTICUM**Psychological Tests**

Maximum Marks: 50

Time: 2 Hrs

Note: *Each student would perform five experiments and tests from the areas mentioned below. The list of exact problems would be decided by the concerned supervisor and approved by the Departmental Committee in the beginning of each semester.*

Each student would submit a record file containing a report of all tests, experiments, duly signed by the respective supervisor. During examination one experiment and one test would be conducted. Evaluation would be based on performance in conduct/ procedure, written report and viva-voce.

Any five experiments from following areas:

- (i) Neo - PI(R)
- (ii) Type A/B Behavior Pattern Scale (ABBPS)
- (iii) Self – Esteem
- (iv) Attributional Style Questionnaire
- (v) Sociometry
- (vi) Aggression
- (vii) Conflict Test
- (viii) EPQ
- (ix) Intelligence
- (x) Bogardus Social Distance Scale

Distribution of Marks

Record Book (Internal)	Procedure & Report	Viva- Voce	Total
10	20	20	50

**M.Sc.- Psychology
Semester- II**

PSY-201

Developmental Psychology: Life Span Perspectives

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 hrs

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Human development- concept and principles. Factors affecting development : biological, social and cultural.

Prenatal development- development from conception to birth, factors and risks.

Neonate- characteristics, reflex, assessment.

Unit-II

Infancy- sensory-motor, cognitive-language and psychosocial development.

Childhood- emotional, cognitive & language, psychosocial development: role of family, sibling, peers, school.

Unit-III

Adolescence- physical changes, relationships with peers and family. Identity formation. Problems during adolescence.

Adulthood- intimate relationship, vocational adjustment, parenthood

Aging- physical conditions, personal relationships, financial and emotional problems.

Unit-IV

Theories and approaches of development- Erikson, Piaget (moral and cognitive), Bronfenbrenner, Kohlberg.

Suggested Readings:

1. Bee, H. and Boyd, D. (2002). Life Span Development. Boston, M.A: Allyn and Bacon.
2. Berk, L.E. (2003). Child Development. New Delhi: Pearson Education.
3. Bukatko, D. and Daehler, M.W. (2001). Child Development: A Thematic Approach. New York: Houghton Mifflin Company.
4. Birren, J.E. and Schai, K.W. (1990). Handbook of the Psychology of Aging. New York: Academic Press.
5. Cunningham, W.R. and Brookbank, J.W. (1988). Gerontology: The Psychology, Biology and Sociology of Aging. London: Harper and Row, Publishers.
6. Crain, W. (1980). Theories of Development. Englewood Cliffs, New Jersey: Prentice Hall.
7. Hetherington, M.E. and Parke, R.D. (1993). Child Psychology: A Contemporary Viewpoint. New York: McGraw Hill.
8. Morgan, L. and Kunkel, S. (1998). Aging: The Social Context. London: Pine Forge Press.
9. Newman, B.M. and Newman, P.R. (1999). Development Through Life: A Psychosocial Approach. New York: Wadsworth Publishing Company.
10. Santrock, J.W. (2006). A Topical Approach to Life Span Development. New Delhi: Tata McGraw Hill.

**M.Sc.- Psychology
Semester- II**

PSY-202

Research Methodology and Statistics-II

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 hrs

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit-I

Research designs: nature, purpose, principles. Between subjects (single and factorial), within subjects (single and factorial).

Tools and techniques of data collection: observation, interview, psychological test, case study.

Unit-II

Sampling: meaning, principles, purpose.

Methods of probability and non- probability sampling

Parametric and non-parametric tests: definition, assumptions, and differences

Unit-III

Analysis of variance: Assumptions and applications. One – way ANOVA (standard and repeated measures). Two-way ANOVA (standard equal and unequal N size).

Regression, prediction- two variable cases.

Unit-IV

Non-parametric statistics: nature, assumptions. Sign test, Wilcoxon sign rank Test, median test, Mann Whitney U test.

Kruskal Wallis One Way Analysis of Variance; Friedman Two Way Analysis of Variance

Suggested Readings:

1. Arthur, A Elaine. W.A. and Elliot, J.C. (2006), Statistics for Psychology, New Delhi: Pearson Education.
2. Anastasi, A. (1988). Psychological Testing. New York: McMillan.
3. Broota, K.D. (1990). Experimental Designs in Behaviour Research. N.D.: Wiley Eastern.
4. Campbell, D.T. and Standlay, J.G. (1996). Experimental and Quasi Experimental Design for Research. Chicago: Rand McNally.
5. Edwards, A.L. (1972). Experimental Designs in Psychological Research. New York: Holt Rinehart and Winston.
6. Freeman, F.S. (1965). Theory and Practice of Psychological Testing. New York: Cor University, Ithaca.
7. Guilford, J.P. (1963). Psychometric Methods. New York: McGraw Hill.
8. Lindqvist, E.F. (1953). Design and Analysis of Experiments in Psychology. Boston Houghton Mifflin.
9. Nunnally, J.C. (1967). Psychometric Theory. New York: McGraw Hill.
10. Silverman, D. (2001). Interpreting Qualitative Data: Methods for Analyzing Talk, Text and Interaction. New Delhi: Sage Publications.
11. Singh, A.K. (1986). Tests, Measurements and Research Methods. N.D.: Tata McGraw Hill.
12. Winer, B.J. (1971). Statistical Principles in Experimental Design. New York: McGraw Hill.

**M.Sc.- Psychology
Semester- II**

**PSY-203
Neuropsychology**

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Max. Time: 3 hrs.

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Neuropsychology: Nature, Approaches, scope.
Methods of studying brain: X-ray, CT scan , MRI, FMRI, pet scan

Unit-II

Lobular organization of brain: frontal lobe, parietal lobe, occipital lobe and temporal lobe.
Lateralization of brain: broca's area, wernicke area, asymmetries, handedness, split brain studies

Unit-III

Neurophysiology of learning and memory: biochemical bases, cortical mechanisms of learning, hippocampus and memory, lobular bases of various types of memories.
Neural mechanism of wakefulness and sleep: physiological mechanisms of sleep and waking, stages and types of sleep, disorders of sleep.

Unit-IV

Neuropsychological assessment batteries: Halstead-Reitan, Luria-Nebraska, PGI battery of brain dysfunction, AIIMS Neuropsychological battery.

Suggested Readings:

1. Bolles, F., & Grafman, J. (1988). Handbook of Neuropsychology. New York: Elsevier.
2. Carlson, Neil. R. (2005). Foundations of Physiological Psychology. (6th Ed. LPE), New Delhi: Pearsons – Education.
3. Dimond, S.J. (1980). Neuropsychology: A textbook of systems and psychological functions of the human brain. Butter worths: London- Boston .
1. 4.Figser, S.B., & Boll, T.J. (1981). Handbook of Clinical Neuropsychology. New York Wiley Intarscience.
4. Filskov, S.B., & Boll, T.J., (1981). Handbook of Clinical Neuropsychology. New York: John Wiley.
5. Goldstein, G., & Hersen, M. (1984). Handbook of Psychological Assessment. New York: Pergamon.
6. Grahm, R.B., (1990). Physiological Psychology. California: Wadsworth.
7. Hersen , M., Kazdin, A.E., & Bellack A.S. (1991). The Clinical Psychology Handbook . New York: Pergamon.
8. Jarvis, P.E., & Jeffery, T. Barth (1994). Halstead- Reitan Neuropsychological Test Battery: A Guide to Interpretation and Clinical Application. Aorida: Psychology Assessment Resources Inc.
9. Kolb, B., & Whisaw, I.Q. (1990). Fundamentals of Human Neuropsychology. New York: Freeman, W.H.
10. Walsh, K. (1994). Neuropsychology: A Clinical Approach. New Delhi: Churchill Livingstone.
11. Zillmer, E.A., Spiers M. V., & Culbertson, W.C. (2008). Principles of Neuropsychology. Stanford: Wadsworth Thomson.

**M.Sc.- Psychology
Semester- II**

PSY-204

Emotion and Motivation

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Max. Time: 3 hrs.

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Emotion- nature. Physiological, cognitive, and behavioural correlates.
Types of emotions, Facial expressions, Measurement of emotions

Unit-II

Theories of emotion- James-Lange, Canon- Bard, Schachter- Singer, Lindsey-activation.
Cognitive appraisal theory, Opponent-process theory, Facial feedback hypothesis.

Unit-III

Motivation- Nature. Factors: personal and environmental
Biological motives- Hunger, Thirst, Sex.
Social motives- Achievement, Affiliation, Approval and power motives.
Measurement of motives.

Unit-IV

Theories of motivation- McDougal, Freud, Maslow, Rogers.
Kurt Lewin, McClelland, Herzberg.

Suggested Readings:

1. B. (1985) Human Motivation, Tokyo: Springer Veilas Publication.
2. Barrett, L. F. (2009). Variety is the spice of life: A psychological construction approach to understanding variability in emotion. *Cognition and Emotion*, 23, 1284-1306.
3. Ekman, P. & Cordaro, D. (2011). What is meant by calling emotions basic. *Emotion Review*, 3, 364-370.
4. Gendron, M. & Barrett, L. F. (2009). Reconstructing the past: A century of ideas about emotion in psychology. *Emotion Review*, 4, 316-339.
5. Lewis, M., Haviland-Jones, J. M., & Barrett, L. F. (Eds.). (2010). *Handbook of emotions* (3rd edition). New York, NY: Guilford.
6. Gorman P. (2004). *Motivation and Emotion*. London: Routledge.

**M.Sc.- Psychology
Semester- II**

**PSY-205
Psychopathology**

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Max. Time: 3 hrs.

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Developmental psychopathology: nature, criteria of psychopathology. Approaches- biological, psychodynamic, behavioural, socio cultural.

Classification of psychopathology: meaning and purpose. Diagnostic Statistic Manual-V

Unit-II

Diagnostic assessment: mental status examination, interview, case study, psychological testing. Mental retardation- types, etiology, management.

Unit-III

ADHD- clinical picture, etiology, treatment. Learning disorder- type, causal factors, treatment. Autism- clinical picture, etiology, treatment. Conduct disorder- clinical picture, etiology, management.

Unit-IV

Elimination disorder- clinical picture, types, etiology. Childhood anxiety, depression- clinical picture and causal mechanisms.

Suggested Readings:

1. Carson, R.C., Butcher, J.N. and Mineka, S. (2003). *Abnormal Psychology and Modern Life*. New Delhi: Pearson Education.
2. Garfinkel, B.O., Carson, G.A. And Weller, E.B. (1990). *Psychiatric Disorders in Children and Adolescents*. London W.B.: Saunders Company.
3. Kapur, M. (1995). *Mental Health of Indian Children*. New Delhi: Sage Publication.
4. Kronenberger, W.G. and Mayer, R.G. (2001). *The Child Clinicians Handbook*. London: Allyn and Bacon.
5. Lewis, M. (1991). *Child and Adolescent Psychiatry*. London: Williams and Wilkins.
6. Malhotra, S. (2002). *Child Psychiatry in India*. New Delhi: MacMillan.
7. Mash, E.J. and Wolfe, D.A. (2005). *Abnormal Child Psychology*. Singapore: Thomson Wadsworth.
8. Sadock, B.J., Sadock, V.A. (2008). *Kaplan and Sadock's Synopsis of Psychiatry: Behavioural Sciences/Clinical Psychology*. New York: Wolters Kluwer/Lippincott Williams and Wilkins.
9. Sharma, N., Kalia, A.K, Husain, A. (2008). *Counselling: Theory, Research and Practice*. New Delhi: Global Vision.
10. Sue, B., Sue, D.W., Sue, S. (2003). *Understanding Abnormal Behaviour*. New York: Houghton Mifflin.
11. Thana, K., Van der Aalsvoort, Pandey. J. (Eds.) (2008). *Perspectives on Learning Disabilities in India: Current Practices and Prospects*. New Delhi: Sage.
12. Weis, R. (2008). *Abnormal Child and Adolescent Psychology*. London: Sage Publication

**M.Sc.- Psychology
Semester- II**

PSY-206

Environmental Studies: Psychological Perspectives

Maximum Marks: 50
Theory Examination: 40
Internal Assessment: 10
Max. Time: 2 hrs.

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Environmental Psychology: Nature and Characteristics; Classification of Environment.
Indian Perspective on Human-environment Relationship

Unit-II

Environmental Stress: Nature and Characteristics.
Types of Stress: Natural Disasters, Technological Catastrophe, Noise and Air-pollution.

Unit-III

Environmental Perception : Nature and Characteristics of Environmental Perception; Social and Cultural Influences.
Environmental Cognition: Environmental Cognition and Cognitive Mapping. Acquisition of Environmental Attitudes.

Unit-IV

Environmental Psychology and Saving the Environment: Environmental Education, Prompts and Reinforcement Techniques in Indian Context.

Suggested Readings:

1. Tewari, P. S. N. (2000). Paryavaraniya Manovigyan. New Delhi: Moti Lal Banarsi Das.
2. Bell, P. A., Greene, T. C., Fisher, J. D. and Baum, A. (2001). Environmental Psychology (Vth Edition). USA: Wadsworth Group / Thomson learning, 10 Davis Drive Belmont CA.
3. Goldsmith, E. (1991). The Way; The Ecological World – View. Bostone; Shambala
4. Ittelson W. H., Proshansky, H. M., Rilvin, E. G., Winkel, G. H. and Dempsey, D. (1974). An Introduction to Environmental Psychology. New York: Holt Rinehart and Winston.

**M.Sc.- Psychology
Semester- II**

PSY-207

Communication Skills

Maximum Marks: 50
Theory Examination: 40
Internal Assessment: 10
Max. Time: 2 hrs.

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-I

Human Communication (Theoretical perspective): Its uniqueness, its nature, models of communication. Types of Human communication. Language, non-verbal communication, logic and reasoning, lateral thinking. The concept of facilitating: factors, barriers and filters in communication; the seven C's of effective communication. Preparing for interviews, CV/Biodata.

Unit-II

Self communication, interpersonal communication, dyadic communication, small group communication. Public communication. Mass Communication. Reliability of communication. Input and Evaluation Processes (Practice): Listening (process, comprehension, evaluation). Reading (process, comprehension, evaluation). Watching (process, comprehension, evaluation). Email Do's and Don'ts.

Unit-III

Output and Interaction Processes (Practice): Speech (conversation, interview, group discussion, public speech). Writing (spontaneous writing, guided writing, creative writing). Organizing ideas (noting, summary, flow charts, concept maps). Correspondence (personal, business).

Unit-IV

Science / Scientific Writing (Theory and practice): Goals and Objectives. Ethics in writing. Structure of documents. Language and grammar. Illustrations and aids. Writing proposals and instructions. Making presentations. Formatting documents. Drafts and revisions. Editing. Writing popular science / journal article.

Suggested Readings:

1. Communicating a social and career focus, K. M. Berko, Andrew D. Wolvyn and Darlyn R. Wolvyn, Houghton Mifflin Co., Boston (1977)
2. The Craft of Scientific Writing (3rd Edition), Michael Alley, Springer, New York (1996)
3. Science and Technical Writing – A Manual of Style (2nd Edition), Philip Reubens (General editor), Routledge, New York (2001)
4. Writing Remedies – Practical Exercises for Technical Writing Edmond H. Weiss, Universities Press (India) Ltd., Hyderabad (2000)
5. Effective Technical Communication, M. Ashraf Rizvi, Tata Mc Graw – Hill Publishing Co. Ltd., New Delhi (2005)

M.Sc.- Psychology
Semester- II

PSY-208: PRACTICUM**Neuro, Emotion and Motivation**

Maximum Marks: 50

Time: 2 Hrs

Note: Each student would perform five experiments and tests from the areas mentioned below. The list of exact problems would be decided by the concerned supervisor and approved by the Departmental Committee in the beginning of each semester.

Each student would submit a record file containing a report of all tests, experiments, duly signed by the respective supervisor. During examination one experiment and one test would be conducted. Evaluation would be based on performance in conduct/ procedure, written report and viva-voce.

Any five experiments from following areas.

1. Motivational analysis test
2. Achievement motivation
3. Biofeedback
4. Emotions and facial expressions
5. Emotional intelligence
6. Study of brain (EEG)
7. Somatic inkblot series-II
8. BBMG
9. PGI battery of brain dysfunction
10. AIIMS Neuropsychological battery

Distribution of Marks

Record Book (Internal)	Procedure & Report	Viva- Voce	Total
10	20	20	50

**M.Sc.- Psychology
Semester- II**

PSY-209: PRACTICUM

Psychopathology and Developmental psychology

Maximum Marks: 50

Time: 2 Hrs

Note: Each student would perform five experiments and tests from the areas mentioned below. The list of exact problems would be decided by the concerned supervisor and approved by the Departmental Committee in the beginning of each semester.

Each student would submit a record file containing a report of all tests, experiments, duly signed by the respective supervisor. During examination one experiment and one test would be conducted. Evaluation would be based on performance in conduct/ procedure, written report and viva-voce.

Any five experiments from following areas:

1. Measurement of intelligence in children- WISC
2. Personality assessment of children- CAT
3. Experiment on conservation and centration
4. Problem behavior checklist (adolescents)
5. Studying of bullying
6. Assessment of ADHD
7. Assessment of MR
8. Assessment of learning disorder
9. Assessment of autism
10. Rosharch ink blot test.

Distribution of Marks

Record Book (Internal)	Procedure & Report	Viva- Voce	Total
10	20	20	50

**M.Sc.- Psychology
Semester- III**

**PSY-301
Clinical Psychology**

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

UNIT-I

Clinical Psychology: Historical development, Nature and Scope. Professional Issues: Roles, Ethics, and Training. Current debates.

UNIT-II

Classification of Psychopathology: DSM and ICD- 10.
Clinical Assessment: Case History, Clinical Interview, Mental status examination.

UNIT-III

Clinical Assessment: Psychological Tests– MMPI, Rorschach, WAIS; Neuropsychological Assessment.
Clinical Intervention: Nature, Goals and course of Psychotherapy.

UNIT-IV

Clinical Intervention: Psychoanalytic therapy, Behaviour therapy, Cognitive-Behaviour Therapy, Biofeedback.
Client Centered Therapy, Gestalt therapy, Family Therapy.

Source books:

- Bellack, A.S., & Hersen, M. (1980). *Introduction to Clinical Psychology*. New York: Oxford University Press.
- Carson, R.C., Butcher, J.N., & Mineka, S. (2000). *Abnormal Psychology and Modern Life* (11th Ed.). New Delhi: Pearson.
- Carson, R.C., Butcher, J.N., Mineka, S., & Hooley, J.M. (2007). *Abnormal Psychology* (13th Ed.). New Delhi: Pearson.
- Hecker, J.E., & Thorpe, G.L. (2005). *Introduction to Clinical Psychology: Science, Practice and Ethics*. New Delhi: Pearson.
- Hersen, M., Kazdin, A.E., & Bellack, A.S. (1983). *The Clinical Psychology Handbook*. New York: Pergamon Press.
- Kaplan & Sadock (2007). *Synopsis of Psychiatry*. New Delhi: Wolters Kluwer.
- Kellerman, H., & Burry, A. (1997). *Handbook of Psychodiagnostic Testing: Analysis of Personality in the Psychological Report*. Boston: Allyn & Bacon.
- Korchin, S.J. (1976). *Modern Clinical Psychology: Principles of Intervention in the Clinic and Community*. New York: Harper.
- Nietzel, M.T., Bernstein, D.A. & Milich, R. (1994). *Introduction to Clinical Psychology* (4th Ed.). New Jersey: Prentice Hall.
- Trull, T.J., & Phares, E.J. (2001). *Clinical Psychology: Concepts Methods and Profession* (6th Ed.). Belmont: Wadsworth.
- Verma, S.K., & Puri, A. (1996). Law and Clinical Psychologists in India. *Indian Journal of Clinical Psychology*, Vol 23 No 2, 79-86.

**M.Sc.- Psychology
Semester- III**

PSY-302

Health Psychology

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

UNIT- I

Health Psychology: Emergence, Nature and Scope.

Models of Health Psychology: Biological model, Psychosocial Model, Health Belief Model, Projection Motivation theory and Theory of planned behavior.

UNIT-2

Stress and Illness: coping, social support and life style.

Western and Indian perspective of stress. Stress management: Relaxation Techniques, Autogenic Training, Mindfulness, Yoga and Meditation.

UNIT-3

Health Risk Behaviours: Smoking, Alcoholism, Obesity and Sedentary lifestyle- Causes, Maintenance and Cessation.

UNIT-4

Health Enhancing Behaviours: Exercise, Diet and Nutrition.
Positive psychology and Health; Management for serious illness.

Source Books:

- Carr, A. (2004). Positive Psychology: The Science of Happiness and Human Strengths. New York: Brunner
- Routledge. - Dimatteo, M.R., & Martin, L.R. (2007). Health Psychology. New Delhi: Pearson Education.
- Malhotra, S.M., Batra, P., & Yadava, A. (2007). Health Psychology: Psycho-Social Perspective. New Delhi: Common Wealth Publishers.
- Marks, D.F., Murray, M., Evans, B. Willig, C, Woodall, C., & Sykes, C.M. (2008). Health Psychology: Theory, Research and Practice. New Delhi: Sage
- Roberts, R., Towell, T., & Golding, J.F. (2001). Foundations of Health Psychology. New York: Palgrave.
- Singh, R., Yadava, A., & Sharma, N.R. (2005). Health Psychology. New Delhi: Global Vision.
- Snyder, C.R., & Lopez, S.J. (2009). Positive Psychology. New Delhi: Sage.
- Straub, R.O. (2007). Health Psychology: A Biopsychosocial Approach. New York: Worth Publishers.
- Taylor, S.E. (2003). Health Psychology. New York: McGraw Hill.
- Yadava, A., & Sharma, N.R. (2007). Positive Health Psychology. New Delhi: Global Vision.
- Sanderson, C.A. (2011). Health Psychology (2nd Ed.). USA: John Wiley & Sons, Inc.
- Marks, D.F., Murray, M., Evans, B., & Estacio, E.M. (2011). Health Psychology: Theory, Research and Practice. New Delhi: Sage.
- Gurung, R.A. R. (2010). Health Psychology: A Cultural Approach. USA: Wadsworth.

**M.Sc.- Psychology
Semester- III**

PSY-303

Industrial - Organizational Psychology-I

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

UNIT- I

Industrial and organizational psychology: Nature, Scope, History and Contemporary issues and challenges.

Organizational structure and development; Organizational culture.

UNIT-2

Job and work environment: Human factors in job design, Job enrichment;

Work environment, Hawthorne studies. Accidents and safety.

Human performance: Time and motion studies, Principles of performance, Performance evaluation and Appraisal.

UNIT-3

Job analysis: Objectives, Methods and Personnel selection: Setting personnel specifications, Criteria and Methods of assessment.

Personnel training: Principles, Types, Evaluation of training effectiveness.

UNIT-4

Work related attitudes: Job satisfaction- antecedents and consequences; organizational commitment- types, antecedents and consequences.

Work motivation: Basic concepts, motivational practices and incentives, Theories- Two factor, ERG, Equity. Organizational citizenship: behavior, characteristics, and factor influencing it

Source Books:

- Aamodt, M.G .(2010). Industrial/Organizational Psychology. (6th Ed) USA : Wadsworth cengage learning.
- Blum, M.L., & Naylor, J.C. (1984). Industrial Psychology. Delhi: CHS Pub.
- Nelson, D.L., & Quick, J.C. (2008). Organizational Behaviour. U.S : South Western Thomson learning.
- Robbins, S.P., Timothy , A.J., & Sanghi S. (2010). Organizational Behaviour. New Delhi: Pearson.
- Schultz, D., & Schultz, S.E. (2004). Psychology and Work today. New Delhi: Pearson.
- Singh, K. (2010). Organizational Behaviour : Text and Cases. New Delhi: Pearson.
- Spector, P.E. (1996). Industrial and Organizational Psychology. USA: John Wiley and Sons, Inc.

**M.Sc.- Psychology
Semester- III**

**PSY-304
Psychometrics**

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

UNIT- I

Psychological Measurement: Meaning, Theoretical issues, Levels and Problems.

Psychological scaling: Methods- Paired comparison, Rank order, Equal appearing intervals and Fractionation.

UNIT-2

Test construction: Steps in test construction; Standardization.

Item response theory, Deterministic and Probability models.

UNIT-3

Reliability: Basic concept, Methods of estimate, Factors affecting reliability.

Validity: Meaning, Validation procedures.

Special problems of reliability and validity.

UNIT-4

Factors analysis: Assumptions, Methods – Centroid and Principal components.

Rotation of factors: Orthogonal and Oblique- Objective techniques.

Source Books:

- Aiken, L.R., & Groth- Marnat, G. (2009). Psychological Testing and Assessment. New Delhi: Pearson Education.
- Anastasi , A., & Urbina, S. (1997). Psychological Testing (7 th Ed.). New Delhi: Pearson Education.
- Gregory, R.J., (2004). Psychological Testing: History, Principles and Applications (4 th Ed.). New Delhi: Pearson Education.
- Kline, P. (1993). The Handbook of Psychological Testing. London: Routledge.
- Murphy, K.R., & Davidshofer, C.O. (1988). Psychological Testing: Principles and Application. New Jersey: Prentice Hall.
- Singh, A.K. (2006). Tests Measurements and Research Methods in Behavioural Sciences. New Delhi: Bharati Bhawan.

**M.Sc.- Psychology
Semester- III**

PSY-305

Criminal Behaviour Psychology & Forensic Psychology

Maximum Marks: 100

Internal Assessment: 20

Theory Examination: 80

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit-1

Criminal psychology: Nature & historical perspective. Approaches of criminal behaviour.: Biological, psychological and social. Method of study. Approaches to classification of crime.

Unit-2

Type of crime I : Juvenile Delinquency, Antisocial personality, crime against children, women and aged, white collar crime, cyber crime and cyber terrorism.

Type of crime II: Homicide, Suicide, Serial Killers, Rampage killer, Sex offenders, Mentally ill offenders, Terrorism- domestic and international.

Unit- 3

Forensic Psychology: Introduction and overview, Historical Perspective, Fields of Forensic Psychology, Education and training.

Assessment of forensic psychology: Interview, Verbal detection, Statement assessment, Hypnosis, Voice analysis, Polygraph, Thermal imaging, Narcoanalysis, Brain electrical oscillation, Signature profiling.

Unit-4

Psychological intervention and correction: Punishing for crime, Behaviour modification, Social interventions, Rehabilitation in family and community, Psychological reforms in jails.

Crime trends in India.

Source books:

1. Abrahamson, D. (1960). Psychology of crime. New York : Columbia University Press.
2. Chokalingan, K. (1991). Readings in Victimology Madras : Rair Raj Publications.
3. Feldman, M.P. (1977). Criminal Behaviour : A psychological analysis. London : Wiley.
4. Goyal, R.K (1992). Reforms in Jails, Chandigarh : India.
5. Kushner, W.W. (1988). The future of terrorism. Delhi: Sage.
6. Reid, S.T. (1979). Crime and Criminology. New York : Holt Rinehart and Winston.
7. Sirohi, J.P.S, (1983). Criminology and Criminal Administration. Allahabad : Law Agency.
8. Trojanowicz, C. (1978). Juvenile delinquency : concepts and controls. Englewood cliffs, Prentice Hall. 9. Walters G.D. (1994). Drug and crime in life style perspective. New Delhi : Sage.

**M.Sc.- Psychology
Semester- III**

PSY-306

Practicum (i)

Clinical, Health, Industrial-Organizational Psychology, Psychometrics and Criminal Behaviour

Maximum Marks: 100

Time: 4 hours

NOTE: Each student would perform ten tests from the areas mentioned below. The list of exact problems would be decided by the concerned supervisor and approved by the Departmental Committee in the beginning of each semester.

Each student would submit a record file containing a report of all tests, duly signed by the respective supervisor. During examination two tests from two different areas would be conducted. Evaluation would be based on performance in conduct/ procedure, written report and viva-voce.

1. Mental health checklist
2. Anxiety scale
3. MMPI
4. Rosharch ink blot test
5. TAT
6. General health questionnaire
7. Body image
8. Stress
9. Happiness
10. SES and health
11. Vocational preference inventory
12. Job satisfaction scale
13. Leadership style
14. Motivation scale
15. Performance appraisal
16. Test construction- Item writing
17. Item analysis
18. Delinquency Screening Test
19. Profiling of criminals
20. Test translation/adaptation

**M.Sc.- Psychology
Semester- III**

**PSY-307
Field/Case Study**

Maximum Marks: 50

The students are required to do a field study/ case study. Case study will be done taking a case from the relevant area mentioned in curriculum. A report will be submitted to teacher concerned at the end of semester.

**M.Sc.- Psychology
Semester- III**

**PSY-309
Self – Study (Community Psychology)**

Maximum Marks: 25

Note: The course intends to understand and familiarize with an introductory knowledge of various Psychological Concepts in the area of Community Psychology. Students will select topic of their interest in the given area with consultation of supervisor/ Resource Person.

Submission: Two typed copies of (not exceeding 1000 words $\pm 10\%$) self- study report are to be submitted by the students.

Evaluation: External examiner will be evaluating the self- study report for a maximum 25 marks.

**M.Sc.- Psychology
Semester- IV**

PSY-401

Neurocognitive Disorders

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80
Time: 3 hours

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit 1

Learning Disorder-Theoretical Framework; Types, diagnostic procedures, early identification etiology; associated problems, assessment and interventions.

Unit 2

Attention-Deficit Hyperactivity Disorder-Theoretical Framework; etiology, Diagnostic Criteria, Developmental Course and adult outcomes, assessment and Interventions.
Autistic Spectrum Disorders-Theoretical Framework, Levels, etiology, assessment and interventions

Unit 3

Dementias—Types; Alzheimer’s Disease: Histologic Markers, Neuropsychological profile, Treatment for Cognitive Enhancement; Parkinson’s Disease, its neuropathology, neuropsychological profile and Treatment

Unit-4

Brain tumors, Cerebral vascular disorders, Closed-Head injuries, Infections of brain, Assessment and Intervention.

Source books:

- Anderson, V., Northam, E., Hendy, J. & Wrennall, J. (2005). *Developmental Neuropsychology: A Clinical Approach* (Brain Damage, Behavior and Cognition Series). NY, NY: Psychology Press, Taylor and Francis Group. Arlington, VA.: American Psychiatric Press.
- Carlson, N.R. (1999). *Foundations of physiological psychology* (4th. ed.). Boston: Allyn & Bacon.
- Grant, I. & Adams, K. (2009). *Neuropsychological Assessment of Neuropsychiatric and Neuromedical Disorders*, Third Edition. New York, New York: Oxford University Press.
- Kolb, B. & Whishaw, I.Q. (2009). *Fundamentals of Human Neuropsychology*. NY, NY: Worth Publishers.
- Lezak, M. D., Howieson, D. B, & Loring, D.W. (2004). *Neuropsychological Assessment*, 4th ed. NY, NY: Oxford University Press.
- Morgan, J.E. & Ricker, J.E. (2008). *Textbook of Clinical Neuropsychology*. NY, NY: Taylor and Francis Publishers, Inc.
- Ogden, J. A. (2005). *Fractured Minds: A Case-Study Approach to Clinical Neuropsychology*, 2nd ed. NY, NY: Oxford University Press.
- Pinel, J.P.J. (2000). *Biopsychology* (4th .ed.). Boston: Allyn & Bacon.
- Reynolds, C.R.(Editor) & Fletcher-Janzen, E. (Editor) (2008). *Handbook of Clinical Child Neuropsychology*, Third Edition. NY, NY: Springer Publishers.
- Rosenweig, M.R., Leiman, A.L. & Breedlove, S.M. (1999). *Biological psychology: An introduction to behavioral, cognitive, clinical neuroscience*. (2nd Ed.). USA: Sinauer Associates, Inc.
- Wallace, B. & Fisher, L.E. (1991). *Consciousness and Behavior* (3rd Ed.). USA: Allyn & Bacon.
- Barkley, R.A. & Murphy, K.R. (2006). *Attention-Deficit Hyperactivity Disorder: A clinical workbook* (3rd ed.). New York: The Guilford Press.
- Gupta, Ashum (2004). Reading difficulties of Hindi speaking children with developmental dyslexia. *Reading and Writing: An Interdisciplinary Journal*, 17, 79-99.
- Gupta, Ashum (2008). Developmental dyslexia: evidence from Hindi speaking children with dyslexia. In K. Thapa, G.M.Aalsvoort, & J. Pandey (Eds.). *Perspectives on learning disabilities in India: Current practices and prospects*. (pp.97-115). Sage Publications.
- Gupta, Ashum. & Singhal, N. (2008). Psychosocial support for families of children with autism. In M. V. Pillai (Ed.) *Exploring Autism* (pp. 77 -105). Hyderabad, India: The ICFAI University Press

**M.Sc.- Psychology
Semester- IV**

PSY-402

Counselling Psychology

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80
Time: 3 hours

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit 1

Counselling: Subject matter, Assumptions, Goals of Counselling, Individual vs Group Counselling.

Areas of counseling: Personal, Educational, Vocational and Marital counseling. Training of a counselor.

Unit- 2

Process of counselling: Preparation, Intake interview, Rapport building, Counselling goals, Techniques of counseling- directive and non-directive, termination and follow-up.

Counselling skills: Listening and attending behaviour, paraphrasing, reflecting, pacing, congruence, self-disclosure.

Unit 3

Counselling techniques(I) : Psychoanalytic, Client-centered, Gestalt, Cognitive-behaviour, Reality therapy

Unit 4

Counselling techniques (II): progressive muscular relaxation, Systematic desensitization, Assertive training, Indigenous techniques: Yoga & Meditation.

Source Books:

- Sharf, R.S. (2000). Theories of psychotherapy and counseling: Concepts and cases (2nd Ed.). Singapore: Brooks/Cole.
- Trull, T.J., & Phares, E.J. (2001). Clinical psychology: Concepts, methods, and profession (6th Ed.). Belmont, CA: Wadsworth/Thomson Learning
- Woolfe & Dryden (1996) – Hand book of Counselling Psychology, Sage Publications, London, Thousand Oaks, New Delhi.

**M.Sc.- Psychology
Semester- IV**

PSY-403

Industrial and Organizational Psychology-II

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80
Time: 3 hours

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

UNIT-I

Organization development: Characteristics of effective change programme, Empowerment, Downsizing, Work schedules.

Work stress and management: Nature, Causes and Consequences. Management of stress, Individual and organizational coping strategies.

UNIT-II

Communication in organization: Basic communication process, formal and informal, Fayol's, Barnard's, and modern perspective, methods to improve interpersonal communication. Decision making: Process, techniques, models –Economic Rationality, Social, Bounded Rationality.

UNIT-III

Group dynamics and teams: Types of groups, dynamics of informal and formal groups. Teams: Characteristics, types, team building, team effectiveness.

Leadership: Nature, styles, role and activities, theories: Trait, Exchange, Contingency, and Path-Goal.

UNIT-IV

Conflict, Negotiation and inter group behavior, Functional and dysfunctional conflicts, Models, Negotiation and Bargaining, Approaches and process of intergroup, Dynamics in organization.

Source books:

Aamodt, M.G .(2010). Industrial/Organizational Psychology. (6th Ed) USA : Wadsworth cengage learning.

- Blum, M.L., & Naylor, J.C. (1984). Industrial Psychology. Delhi: CHS Pub.

- Nelson, D.L., & Quick, J.C. (2008). Organizational Behaviour. U.S : South Western Thomson learning.

- Robbins, S.P., Timothy , A.J., & Sanghi S. (2010). Organizational Behaviour. New Delhi: Pearson.

- Schultz, D., & Schultz, S.E. (2004). Psychology and Work today. New Delhi: Pearson.

- Singh, K. (2010). Organizational Behaviour : Text and Cases. New Delhi: Pearson.

- Spector, P.E. (1996). Industrial and Organizational Psychology. USA: John Wiley and Sons, Inc.

**M.Sc.- Psychology
Semester- IV**

**PSY-404
Rehabilitation Psychology**

Maximum Marks: 100
Internal Assessment: 20
Theory Examination: 80
Time: 3 hours

Note: There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.

Unit 1

Introduction: Concept & definition of rehabilitation, concept of Impairment, Evolution of rehabilitation.

Models of rehabilitation: Bio psychosocial, Learning and behavioural, Neuropsychological, Cognitive–Behavioural Model.

Unit-2

Bio psychosocial elements of rehabilitation: Biological, Personal/Psychological, Social/Occupational elements. Professional Issues: The Rehabilitation Team, Competencies of a rehabilitation Psychologist, Role of Rehabilitation Psychologist.

Unit-3

Rehabilitation for Common mental and physical health problems: Clinical and Occupational.

Neuropsychological Rehabilitation: Process, Adaptation and recovery of functions in brain damage. Quality of life and community reintegration.

Unit-4

Policy issues in Rehabilitation: Legislation: Mental Health Act, PD Act, RCI Act, National Trust Act. Ethical issues in Rehabilitation. Future challenges for rehabilitation psychology.

Source Books:

- Golden C.J., 1984. Current Topics in Rehabilitation Psychology: Grune & Straton, London.
- Nirbhay N.Singh, 1998. Comprehensive Clinical Psychology: Application in Diverse Populations, Volume 9, Elsevier Science, Pergamon.
- Zigler, E, Gates, D.B (1999). Personality development in individuals with Mental Retardation, New York: Cambridge University Press

**M.Sc.- Psychology
Semester- IV**

**PSY-405
Psycho Informatics**

Maximum Marks: 100
Theory Examination: 80
Internal Assessment: 20
Time: 3 hrs

Note: *There shall be nine questions in all. Question no. 1 shall be compulsory, consisting of eight short answer type questions covering the entire syllabus. Two questions will be asked from each unit. Student will have to attempt one question from each unit. Each question shall carry equal marks.*

Unit-1

Psycho Informatics- Introduction, Importance and Application; Paradigm shift in psychological research from hypothesis to data driven model; Big data and cloud computing; Machine learning concepts; Data visualization: Python ecosystem, R and relevant packages (NumPy/SciPy, pandas, statsmodels).

Unit-2

Method of Psycho Informatics- Aggregating and organising the data: data warehousing and data retrieval; Large scale data mining and synthesis; Evaluating results and Conclusion: tools for detecting “p-hacking”, post publication platforms, automated quality control tools; communicating data and results: alternatives and complements to traditional journal-based publication(the Open Science Framework, FigShare) .

Unit- 3

Data manipulation and text mining- processing text data using R, basic text mining techniques using MALLET.

Data collection in psycho informatics- web- based data collection: pros and cons of different options, Amazon Mechanical Turk; smartphone based data collection: methods, mobile sensing capabilities, ethical issues..

API Usage- API in using existing large-scale datasets.

Unit-4

Fundamentals facets of Brain Informatics- Autonomy oriented computing & Granular computing.Computational psychology. Meta-analysis.

Good developmental practices- introduction to key practices in software development, good documentation, version control and systematic testing.

M.Sc.- Psychology
Semester- IV

PSY-406
Practicum

Maximum Marks: 100

Time: 4 hours

NOTE: Each student would perform 5 tests and 5 profiling of tests/instruments from the areas mentioned below. The list of exact problems would be decided by the concerned supervisor and approved by the Departmental Committee in the beginning of each semester.

Each student would submit a record file containing a report of all tests, duly signed by the respective supervisor. During examination one tests and one profiling of tests/instruments would be conducted. Evaluation would be based on performance in conduct/ procedure, written report and viva-voce.

(i) Counselling psychology, Rehabilitation psychology (any 5)

- a. Vineland social maturity scale
- b. Developmental screening test
- c. Sanguine form board
- d. Guidance need inventory
- e. Gestalt technique
- f. Systematic desensitization
- g. Shaping
- h. Cognitive structuring
- i. Family environment scale
- j. Extinction

(ii) Profiling of tests and instruments (any 5)

- a. Reaction time apparatus
- b. Span of attention
- c. Tachitoscope
- d. Two hand co-ordination
- e. Mirror drawing apparatus
- f. Weschler's adult intelligence scale
- g. 16 PF
- h. Neo-PIR
- i. Stanford Binet Intelligence scale: fourth edition
- j. Vineland Adaptive Behavior Scale

M.Sc.- Psychology
Semester- IV

PSY-407

Project work

Maximum Marks: 50

Each student will be given a research topic at the beginning of the semester by their supervisors/teachers. Students will be required to collect data from relevant subjects. After the analysis of results, students will submit a written report of the work done to concerned supervisor.

M.Sc.- Psychology
Semester- IV

PSY-409

Self - Study

Maximum Marks: 25

Note: The course intends to understand and familiarize with an introductory knowledge of various Concepts in the area of psychology. Students are guided to select topic of their interest in the given area with consultation of supervisor/ Resource Person.

Submission: Two typed copies of (not exceeding 100 words $\pm 10\%$) self- study report are to be submitted by the students.

Evaluation: External examiner will be evaluating the self- study report for a maximum 25 marks.