

RAJASTHAN PUBLIC SERVICE COMMISSION, AJMER

SYLLABUS FOR SCREENING TEST FOR THE POST OF SENIOR SCIENTIFIC OFFICER POLYGRAPH DIVISION

STATE FORENSIC SCIENCE LABORATORY (HOME DEPARTMENT)

1. Biological basis of Behavior-

The Central and Peripheral Nervous Systems – Structure and functions.

Methods of Physiological Psychology: Invasive methods – Anatomical methods, degeneration techniques, lesion techniques, chemical methods, microelectrode studies. Non-invasive methods – EEG, Scanning methods.

Glandular system: Types and functions, Biological basis of Motivation: Hunger, Thirst, Sleep and Sex. Biological basis of Emotion: The Limbic system, Hormonal regulation of behavior. Genetics and behavior.

2. Perception and Learning-

Perception: Concept of Perceptual Organization & Illusions, Role of motivation and learning in perception, Learning Process, Fundamental theories: Thorndike, Guthrie, Hull, Classical Conditioning: Procedure, phenomena and related issues, Instrumental learning: Phenomena, Paradigms and theoretical issues; Reinforcement: Basic variables and schedules; Behavior modification and its applications, Cognitive approaches in learning: Latent learning, observational learning. Verbal learning.

3. Memory, Forgetting and Thinking-

Memory processes: Encoding, Storage, Retrieval, Stages of memory: Sensory memory, Short-term memory (Working memory), Long-term Memory (Declarative – Episodic and Semantic; Procedural), Theories of Forgetting: Interference, Retrieval Failure, Decay, Motivated forgetting.

Language and Thought Problem solving: Type, Strategies, and Obstacles, Decision-making: Types.

4. Intelligence and Personality-

Intelligence: Concept & Theories, Determinants of Personality: Biological and Socio-cultural, Approaches to the study of Personality: Psychoanalytical, Neo-Freudian, Social learning, Trait and Type, Cognitive, Humanistic, Existential, Transpersonal psychology. Other Theories: Rotter's Locus of Control, Seligman's Explanatory styles, Kohlberg's theory of Moral development.

5. Motivation and Emotion-

Basic motivational concepts: Instincts, Needs, Drives, Arousal, Incentives, Motivational Cycle. Approaches to the study of Motivation: Psychoanalytical, Ethological, S-R Cognitive, Humanistic Exploratory behavior and curiosity, Zuckerman's Sensation seeking achievement, affiliation and power, motivational competence, Self-regulation flow.

Emotions: Physiological correlates emotion regulation.

6. Social Psychology-

Social perception Attitude and its change within cultural context; Prosocial behavior Group and Social influence [Social Facilitation; Social loafing]; Social influence [Conformity, Peer Pressure, Persuasion, Compliance, Obedience, Social Power, Reactance], Group dynamics, Theories of intergroup relations [Minimal Group Experiment and Social Identity Theory, Relative Deprivation Theory, Realistic Conflict Theory, Balance Theories, Equity Theory, Social Exchange Theory], Applied Social Psychology: Environment and Law; Crowding.

7. Human Development: Stress and Coping-

Developmental processes: Nature, Principles, and Factors in development, Stages of Development. Successful aging. Various aspects of development: Sensory-motor, cognitive, language, emotional, social and moral. Conflicts: Sources and types, Stress and Coping: Concept, Models, Type A, B, C, D behaviors, Stress management strategies [Biofeedback, Music therapy, Breathing exercises, Progressive Muscular Relaxation, Guided Imagery, Mindfulness, Meditation, Yogasana, Stress Inoculation Training].

8. Psychopathology and Interventions-

Psychopathology: Concept, Classification and Causes, Psychotherapies: Psychoanalysis, Person-centered, Gestalt, Existential, Acceptance-Commitment Therapy, Behavior Therapy, REBT, CBT, MBCT, Play Therapy, Positive psychotherapy, Transactional Analysis, Dialectic behavior Therapy, Art Therapy, Performing Art Therapy, Family Therapy. Applications of Theories of Motivation and Learning, Counseling: Process, skills, and techniques.

9. Research Methodology-

Research: Meaning, Purpose, and Dimensions. Research Problems, Variables and Hypothesis, Sampling. Ethics in conducting and reporting research, Paradigms of research: Quantitative, Qualitative, Mixed methods approach, Methods of Research: Observation, Survey [Interview, Questionnaires], Experimental, Quasi-experimental, Field studies, Cross-Cultural Studies, Narratives, Case studies, Research Designs: Meaning and Types.

10. Psychological Testing-

Types and Characteristics of Psychological Tests. Ethical Issues in Psychological Testing, Areas of Testing: Intelligence, Neuropsychological tests, Personality assessment, Interest inventories and Attitude Applications of psychological testing in various settings: Clinical & Forensic settings.

11. Forensic Psychology-

Definition and scope of Forensic Psychology-Historical perspective; Developmental Theories, Role and responsibility of Forensic Psychologist, Legal Concepts and Evidence related Issues, Interrogative techniques, Forensic Psychology in India, Concept of Cyber Psychology: Cyber Pornography, Cyber bullying.

12. Forensic Psychological Assessment and Investigating Techniques-

Forensic Psychological Assessment and Crime Investigation Tools, Detection of deception, Methods for detection of deception. Interview and interrogation, Non-verbal detection, Forensic Statement Analysis, Hypnosis Layered Voice Analysis, Psychological Autopsy, Narco-Analysis & Brain – Mapping, Current research in detection of deception/truth finding mechanisms, Eye witness testimony, Impact of Crime on Victim & Psychological Aid to Victim, Rehabilitation of Criminals.

13. Psychological Disorder and Criminal Behavior -

Concept and theories of Criminal Behavior, Punishment & type of Punishment, Psychology of Aggression & Violence, Emerging Crime trends in India, Prevention of Crime Juvenile delinquency and cause and prevention. Mentally ill offenders, Psycho-Path offenders, Serial killers, Criminal Profiling, Crime Scene Profiling, Sex- Offenders, Child Abuse & Domestic Violence, Psychological Profiling of Terrorist, Drug related Crime.

14. Psychology and Court –Room & Legal Aspect in Forensic Psychology-

Types of Court and role of psychologists – criminal, juvenile, civil & family court, Criminal Competency, Understanding court process and punishment. Effect of Attorney, Judges, Jurors & Defenders, Expert Testimony (Definition and Section under Indian Evidence Act), Requirements from the Investigating Officer, Consent (Article 21(3), Important Judgements (Selvi&Ors vs State of Karnataka, etc), Admissibility of Forensic Report in Court (Section 293 Cr. Mental Health and Law Supreme Court Judgment and NHRC Guideline.

15. Polygraph-

Meaning of Polygraph, Physiological Aspects (GSR/Blood Pressure/Respiration/Motor Activity), Psychological Aspects (Flight/Fight Response/Autonomic Nervous System), Sensors of Polygraph (Pneumograph/cardio – sphygmograph/galvanograph) Testing Procedure (Pre – test Interview/Examination, Proper/Post Test Interview) Types of Questionnaires (MGQT/POT/Card Test/Affirmative Test, etc), Polygraph and Autonomic Nervous System, Limitation in Polygraph, False Positive & False Negative Advantages and Limitations of Polygraph Examination.

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Pattern of Question Papers:

- 1. Objective Type Paper**
- 2. Maximum Marks: 150**
- 3. Number of Questions: 150**
- 4. Duration of Paper : 2:30 Hours**
- 5. All Questions carry equal marks**
- 6. Medium of Screening Test: Bilingual in Hindi & English**
- 7. There will be Negative Marking**

(For every wrong answer, one-third of marks prescribed for that particular question will be deducted).