

**FEDERAL PUBLIC SERVICE COMMISSION
(Curriculum & Research Wing)**

**Schemes and Syllabi for Screening/Professional Tests Relating to Project Posts under FPSC Project Titled
“Computer Based Testing (CBT) for various test/exam conducted by FPSC”**

S. No	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
1.	Project Manager (01)	i. Masters in Computer Science/IT or Project Management or equivalent from indigenous/foreign institute/university recognized by HEC. ii. At least 12 years post qualification experience of handling large scale IT related projects involving distributed systems/cloud based environment, proven experience in project management, strong understanding of formal project management methodologies etc. iii. In case of M.Phil, two years and for Ph.D four years post qualification experience is relaxable	Objective Type Test (MCQ) Professional Test=100 marks	i. English = 20 Marks ii. <u>Rules & Office Procedures (20 Marks)</u> <ul style="list-style-type: none"> • Rules of Business 1973 • Secretariat Instructions and Office Procedure • System of Financial Control and Budgeting • Public Procurement Rules, 2004 iii. <u>Information Technology (20 Marks)</u> <ul style="list-style-type: none"> • Computer System Components and Communication System, • Information Security/Privacy • Computer Communications & Networks • Layering: OSI and TCP/IP, • Relational Data Model & Relational Database Constraints • Distributed Databases, Database Security & Access Control • File Systems (UNIX and Windows Systems), Web applications Issues (Accessibility, testing, performance, operation, maintenance, security). iv. <u>Project Management (40 Marks)</u> <ul style="list-style-type: none"> • Project Management, • Processes Integration Management, • Project Plan Development, • Project Plan Execution and Monitoring & Evaluation • Human Resource and Financial Management • Project preparation in Public Sector

S. No	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
2.	Accounts/ DDO/ Admin Officer (01)	i. M.B.A/M.Com or B.Com/B.S. Finance Hons. or equivalent from a reputed foreign or HEC recognized institute/university with 01 year of experience of dealing of public sector financial/ administrative matters OR B.A./B.Sc. with minimum 05 years of relevant experience of working in public sector in connection with financial/administrative matters and budget payment as per PPRA rules ii. In case of M.Phil, two years and for Ph.D four years post qualification experience is relaxable	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Civil Servants Act, 1973 • Rules of Business, 1973 • Secretariat Instructions and Office Procedure. • System of Financial Control and Budgeting, • Accounting Principles & Procedures, • Scrutiny of Record for Audit Purposes, • Journal, Ledger & Cash Book, • Financial Planning & Cost Accounting, • Re-appropriation of Funds and Supplementary Grant, • Settlement of Audit Objections • Preparation of Pension Documents. • Public Procurement Rules, 2004
3.	Information Security Officer (01)	i. Masters in Computer Science/ IT/ Information Security or equivalent from indigenous/foreign institute/university recognized by HEC. ii. At least 05 years post qualification experience of developing, implementing and securing of IT Infrastructure. Detailed technical knowledge of database, operating system security, Next Generation Firewalls, intrusion detection & prevention systems, anti-malware, authentication systems, log management, content filtering, cryptography etc. iii. In case of M.Phil, two years and for Ph.D four years post qualification experience is relaxable	Objective Type Test (MCQ) Professional Test=100 marks	<ul style="list-style-type: none"> • Open Source Interconnect (OSI) Model and Network Security • Advanced Analysis of malware using static and dynamic techniques • Types of malware. • Server side web applications attacks. • Cross-site scripting, • SQL Injection, • Cross-site request forgery, • Network protocols and service models. • Transport layer security, Network layer security, • Wireless security, • Embedded System Software • Cryptographic algorithms and design principles, including conventional and symmetric encryption • Data Acquisition Techniques from Smartphones or likewise devices. • Best practices of client side technologies like HTML, CSS, JavaScript & JQuery etc. • Cloud Networks and lot Vulnerabilities & Security

S. No	Particulars of Post(s)	Qualifications/Experience for the Posts	Test Specification	Topics of Syllabi
4.	Database Administrator (01)	<p>i. Masters in Computer Science/IT or equivalent from indigenous/foreign institute/university recognized by HEC.</p> <p>ii. At least 05 years post qualification experience as a Database administrator. Hands-on experience with database standards/Big Data and end user applications. Excellent knowledge of data backup, recovery, security, integrity of database, Data Loss Prevention. Familiarity with database design, documentation, implementation and SAN.</p> <p>iii. In case of M.Phil, two years and for Ph.D four years post qualification experience is relaxable</p>	<p>Objective Type Test (MCQ) Professional Test=100 marks</p>	<ul style="list-style-type: none"> • <u>Object Oriented Programming (20 Marks)</u> Data types, control structures, functions, arrays, classes, methods, object and encapsulation; constructors and destructors, operator and function overloading, virtual functions, derived classes, inheritance and polymorphism, I/O and file processing. • <u>Data Structure and Algorithms (20 Marks)</u> Stack and Queue, Sequential Search, Binary Search, Bubble sort, Merge sort, Quick sort, Insertion sort, Selection Sort, Linked Lists, Infix to postfix conversions, Expression tree construction, Tree traversals, Graph representation and traversal, Minimum spanning tree. • <u>Database Management Systems (40 Marks)</u> Entity Relationship modeling, Relational data model and algebra, Structured Query language, Database design, functional dependencies and normal forms, concurrency control and recovery techniques, Database security and authorization, Data Warehousing, Data Mining, Distributed databases, Database Security & Access Control, Query Processing & Evaluation, Query Optimization, Transaction Processing, Object Oriented Databases • <u>Computer Communications and Networks (20 Marks)</u> Asynchronous and Synchronous transmission, LAN/WAN/MAN, Network layers, Transport layer protocols TCP/IP, UDP, Error Control, Flow Control, Multiplexing, Routing, Bridging, Network security issues.