

DETAILED SYLLABUS FOR THE POST OF IT OFFICER
(Kerala State Co-operative Bank Ltd) - Direct Recruitment

(Cat.No.: 522/2022)

Part I – Computer Science

Module I Computer Hardware (10 Marks)

Technical specifications of desktops/laptops/servers.

Certifications – ROHS, BIS, EPEAT, BEE/Energy Star, UL, CE, FCC.

I/O devices – standard I/O interfaces (PCI Express, NVMe, USB, SATA), RAID.

Semiconductor RAMs –semiconductor ROMs –flash memory –cache memory.

Processing unit - microprocessor, microcontroller, GPU.

UPS and battery types.

Module II Programming Environment (10 Marks)

Programming – data structures, sorting and searching algorithms, object oriented programming.

System software – compiler, interpreter, debugger.

Features of Windows and Linux variants of operating systems.

File systems, file sharing methods.

Mobile application development – tools, libraries and platforms.

Module III Database Management Systems (10 Marks)

Types of data and DBMS.

Relational Model – concepts and languages, SQL.

Concurrent transaction processing and recovery principles, logs, checkpoints.

Database scaling – replication – partitioning.

NoSQL databases.

Module IV Data Communication (10 Marks)

Guided transmission media: twisted pair, Coaxial cable, optical fiber.

Wireless transmission, terrestrial microwave, satellite microwave.

Mobile communication - GSM, 4G, 5G.

Wireless LANs - 802.11 standards. Personal Area Networks – Bluetooth.

Module V Machine Learning & Artificial Intelligence (10 Marks)

Supervised learning – linear regression, classification, Naive Bayes, Decision tree algorithm.

Neural Network - Multilayer feed forward network, Activation functions (Sigmoid, ReLU), Back-propagation algorithm.

Unsupervised learning – Clustering. Dimensionality reduction – Principal Component Analysis.

Tools, libraries and platforms for machine learning / deep learning.

Large language models – ChatGPT, Bard, LLaMA.

Part II – Information Technology

Module VI Computer Networks (10 Marks)

Network hardware devices (Hub, Switch, Modem, Router, Bridge, Repeater).

Network layer – IPv4 – Ipv6 - IP Addressing – subnetting, supernetting.

Application layer – electronic mail, MIME, SNMP, streaming protocols.

Configuring network services - SSH, web/proxy server, DHCP, DNS, LDAP.

Internet of Things (IoT), Wide Area Networks.

Module VII Web Technologies (10 Marks)

HTML - basic text markup, Cascading Style Sheets.

JavaScript, JSON, XML. Frameworks.

World Wide Web - Web browsers, Hypertext Transfer Protocol. Content Management System.

Full stack programming – ReactJS, Node.js.

Module VIII CyberSecurity (10 Marks)

Network Security fundamentals. Security policy. Risk analysis.

Firewalls - Types of firewalls, application layer firewalls, packet filtering firewalls, UTM.

Intrusion detection and prevention.

Server hardening.

Virtual Private Networks, managing VPNs.

End-point security. Cyberforensics.

Module IX Cloud Computing (10 Marks)

Cloud delivery models - Infrastructure-as-a-Service (IaaS), Platform-as-a-Service(PaaS), Software-as-a-Service (SaaS), XaaS (Anything-as-a-service).

Cloud deployment models- Public cloud, Community cloud, Private cloud, Hybrid cloud.

Virtualization – hardware / OS level virtualization, Hypervisors. Storage/Desktop Virtualization.

Internet Service Providers (ISP), Data center technology.

Amazon Web Services, Google Cloud, Microsoft Azure.

Module X IT and Finance (10 Marks)

Payment gateways – Unified Payment Interface – Digital Rupee.

Cryptocurrencies – blockchain, mining.

E-governance and M-governance.

Big data analytics – Apache Hadoop, MapReduce, Apache Spark.

NOTE: - It may be noted that apart from the topics detailed above, questions from other topics prescribed for the educational qualification of the post may also appear in the question paper. There is no undertaking that all the topics above may be covered in the question paper.