SCHEDULE FOR WRITTEN TEST FOR THE FOLLOWING POST NOTIFIED UNDER NOTIFICATION NO. 02/2023

Date	Time	Post
04.02.2024 (Sunday)	11am – 1pm	Supervisor (P&A) Jr. Accountant
	3pm – 5pm	Sr. Officer (HR & Admin) Secretarial Officer
11.02.2024 (Sunday)	11am – 1pm	Sr. Accounts Officer
	3pm – 5pm	Sr. Engineer (IT) Supervisor (Civil)
18.02.2024 (Sunday)	11am – 1pm	Sr. Engineer (PS)

*Admit card has already been issued to the candidates.

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INDICATIVE SYLLABUS FOR THE POST OF SENIOR OFFICER (HR & ADMN.)

1. **Human Resource Management:** Introduction, staffing, manpower planning, Recruitment, performance appraisal, wage and salary administration, employee welfare, accidents and safety issues

2. **Human Resource Planning:** Objectives, HRP at Different Levels, The Process of HRP, Assessing Current Human Resources and Making an Inventory, Forecasting, Matching the Inventory with Future Requirements, Managing the Forecasted Demand/ Surplus, Managing Future Demand, Managing Future Surplus, Dealing with Surplus Manpower, Growing Importance of Human Resource Planning, Current Trends

3. **Human Resource Development (Strategies and Systems):** Concepts, Assumptions, Values, HRD Mechanisms, Action – research Model, HRD Culture and Climate, HRD Interventions, HR Accounting and Audit, Consultant – client relationship, Knowledge Management, change management, Human resource development process— assessment, design, implementation, and evaluation, Training, coaching, mentoring, counseling, career planning and development, aligning strategy with HRD activities.

4. **Human Resource Information System:** Human Resource Management-Systems Approach, strategic Role of Information in HRM, Information Technology-Concepts & Issues, HRIS Philosophy, HRIS Implementation and Control, Designing an HRIS Department, Statistical Applications in HR, Compensation and Benefits Management, Training and Development, HR Planning and Analysis, Social Reporting, HRIS Initiatives in Indian Companies

5. **Corporate governance and CSR:** CSR policies, major stakeholders - their current and future plans, organizational, social and economic issues, role of civil society and government, challenges

6. **Emotional Intelligence and Managerial Effectiveness:** Concept of EI, theories, and measurement, EI and managerial performance.

7. **Grievance Management:** Concept of Grievance, Causes of Grievance, Need for a Grievance Redressal Procedure, Effective Grievance Redressal, Steps in a Grievance Redressal Procedure, Grievance Redressal Procedure in Unionized Organizations, Legislative Aspects of the Grievance, Redressal Procedure in India.

8. **Industrial Relations & Trade Unions:** Nature, concept, models and theories of IR, Collective bargaining, industrial disputes, workers participation management, employee discipline, grievance handling, trade unionism, development of unionism, structure and types of unions, trade unions act, issue of registration and recognition, problems of unions in liberalized economy. Bi-partitism, Tri-partitism, Collective Bargaining, Workers' Participation in Management and Employer's organizations.

9. **Labour Laws:** Introduction; Regulatory laws-Trade union act 1926, ID act 1947, Industrial Employment (Standing order act) 1946, Protective laws- Factories act, 1948, Wage laws- Minimum wages act, 1948, payment of wages act, 1936, Equal remuneration act, 1976, The payment of bonus act, 1965, Social security laws- EPF act, 1952, ESI act, 1948, Employee's compensation act 1923, Maternity benefit act, 1961, Payment of gratuity act, 1972, Contract labour laws Contract labour act 1986, Bonded labour system act 1986, Child labour act, 1986 and Labour Codes

10. **Management of Compensations and Benefits:** Wages and salary concepts, Factors affecting wage and salary, legislative measures, job evaluation, components of compensation, linking rewards with performance, indirect or fringe benefits

11. **Management Process and Organizational Behavior:** Foundations of Individual

Behavior, Values and Personality, Attitudes and job satisfaction, Perception and individual decision making, Motivation in the Workplace, Motivation Through Applied Performance, Practices, emotions and moods

12. **Organizational Structure Design and Change:** Foundation of structure, factors affecting structure- environment, strategy, size, culture and technology, organizational development and change, stress management, corporate transformation and turnaround

13. **Performance Management & Appraisal:** Goals and objectives, Planning performance, self-appraisal performance analysis, performance ratings techniques, performance review discussion, using performance management data for HR decisions and performance improvements goals and objectives, Planning performance, self-appraisal performance analysis, performance ratings techniques, performance review discussion, using performance management data for HR decisions and performance improvements

14. **New Trends in HRM:** Changing environment of HRM and contemporary challenges, Emerging HRM Concepts.

15. **International Human Resource Management (IHRM):** Organisational context of IHRM, IHRM and Sustainable Business, Functions of IHRM, Cross – Cultural Studies, Cultural Diversity, Transnational Organisations, IHRM models.

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INDICATIVE SYLLABUS FOR WRITTEN TEST FOR THE POST OF

SUPERVISOR (P & A) ADVERTISED VIDE NOTIFICATION NO.: 02/2023

The Written test will comprise of objective-type-multiple-choice question containing 120 questions in 02 Parts i.e. Part-A & Part-B. The test will be held for 120 minutes duration (in one sitting) with following pattern:

1. **Part-A** will consist of : Quantitative Aptitude, Logical Reasoning

2. **Part-B** will consist of : Professional knowledge (Discipline related)

PART-B

INDICATIVE SYLLABUS FOR THE POST OF SUPERVISOR (P & A)

Introduction: Importance of Human Resource Management - Meaning, Nature and Scope, Functions and Role of HR Manager - Advisory and service function to other department - HRM function planning - objectives and policies, organizing the HRM Department.

Job Analysis, Job description, job specification, recruitment, selection, placement and induction and socialization,

Training & development. Types and method, job change - career planning, promotion, demotion, transfer, separations.

Compensation Function: Job evaluation - Merit rating - Methods' of wage, payment, incentive compensation - Types, advantages, perquisites. Wage system in India - Minimum wage, fair wage, living wage

Maintenance and Integration Functions: Administration of welfare, amenities & fringe benefits, safety & accident prevention work, environment fatigue safety, accident prevention. Employee grievances and their redressal, suggestion schemes, administration of discipline.

Performance appraisal - purpose, factors, methods 360 degree feed back uses and application, human resource accounting.

Regulation & Acts: Factories Act, EPF, ESI, Trade Union Act, ID Act, Collective Bargaining, Wage & Recognition, Industrial Relations, working conditions Safety, Health & Environment, Compensation Management, Labour Welfare & Labour Laws, Social Security issues etc.

Industrial Relations & Trade Unions: Nature, concept, models and theories of IR, Collective bargaining, industrial disputes, workers participation management, employee discipline, grievance handling,

Labour Laws: Introduction; Regulatory laws-, Industrial employment act (standing order act) 1946, Protective laws-, Wage laws- minimum wages act, 1948, payment of wages act, 1936, Equal remuneration act, 1976, The payment of bonus act, 1965, Social security laws- EPF act, 1952, ESI act, 1948, workmen's compensation act 1923, Maternity benefit act, 1961, payment of gratuity act, 1972, Contract labour laws Contract labour act 1986, Bonded labour system act 1986, child labour act, 1986

INDICATIVE SYLLABUS FOR WRITTEN TEST FOR THE POST OF

SENIOR ACCOUNTS OFFICER ADVERTISED VIDE NOTIFICATION NO.: 02/2023

The Written test will comprise of objective-type-multiple-choice question containing 120 questions in 02 Parts i.e. Part-A & Part-B. The test will be held for 120 minutes duration (in one sitting) with following pattern:

1. **Part-A** will consist of : Quantitative Aptitude, Logical Reasoning

2. **Part-B** will consist of : Professional knowledge (Discipline related)

INDICATIVE SYLLABUS FOR WRITTEN TEST FOR THE POST OF

SR. ENGINEER (IT) ADVERTISED VIDE NOTIFICATION NO.: 02/2023

The Written test will comprise of objective-type-multiple-choice question containing 120 questions in 02 Parts i.e. Part-A & Part-B. The test will be held for 120 minutes duration (in one sitting) with following pattern:

1. **Part-A** will consist of : Quantitative Aptitude, Logical Reasoning

2. **Part-B** will consist of : Professional knowledge (Discipline related)

INDICATIVE SYLLABUS FOR THE POST OF SR. ENGINEER (IT)

1. Microoperations

Basic Computer Organization and Design: Stored Program Organization and Instruction Codes, Computer Registers, Computer Instructions, Timing and Control, Instruction Cycle, Memory-Reference Instructions, Input-Output, Interrupt.

Programming the Basic Computer: Machine Language, Assembly Language, Assembler, Program Loops, Subroutines, Input-Output Programming.

Microprogrammed Control: Control Memory, Address Sequencing, Design of Control Unit.

Central Processing Unit: General Register Organization, Stack Organization, Instruction Formats, Addressing Modes, RISC Computer, CISC Computer.

Input-Output Organization: Peripheral Devices, Input-Output Interface, Asynchronous Data Transfer, Modes of Transfer, Priority Interrupt, DMA, Serial Communication.

Memory Hierarchy: Main Memory, Auxiliary Memory, Associative Memory, Cache Memory, Virtual Memory, Memory Management Hardware.

2. Programming Languages

Elementary Data Types: Properties of Types and Objects; Scalar and Composite Data Types.

Programming in C: Tokens, Identifiers, Data Types, Sequence Control, Subprogram Control, Arrays, Structures, Union, String, Pointers, Functions, File Handling, Command Line Arguments, Preprocessors.

Object Oriented Programming: Class, Object, Instantiation, Inheritance, Encapsulation, Abstract Class, Polymorphism.

Programming in C++: Tokens, Identifiers, Variables and Constants; Data types, Operators, Control statements, Functions Parameter Passing, Virtual Functions, Class and Objects; Constructors and Destructors; Overloading, Inheritance, Templates, Exception and Event Handling; Streams and Files; Multifile Programs.

Web Programming: HTML, DHTML, XML, PHP, DOT NET, ASP.NET, C#.NET, Scripting etc.

3: Database Management Systems

Database System Concepts and Architecture: Data Models, Schemas, and Instances; Three-Schema Architecture and Data Independence; Database Languages and Interfaces; Centralized and Client/Server Architectures for DBMS.

Data Modeling: Entity-Relationship Diagram, Relational Model - Constraints, Languages, Design, and Programming, Relational Database Schemas, Update Operations and Dealing with Constraint Violations; Relational Algebra and Relational Calculus; Distributed Databases and Client-Server Architectures.

SQL: Data Definition and Data Types; Constraints, Queries, Insert, Delete, and Update Statements; Views, Stored Procedures and Functions; Database Triggers, SQL Injection.

Normalization for Relational Databases: Functional Dependencies and Normalization; Algorithms for Query Processing and Optimization; Transaction Processing, Concurrency Control Techniques, Database Recovery Techniques, Object and Object-Relational Databases; Database Security and Authorization.

Data Warehousing and Data Mining: Data Modeling for Data Warehouses, Concept Hierarchy, OLAP and OLTP; Association Rules, Classification, Clustering, Regression, Support Vector Machine, K-Nearest Neighbour, Hidden Markov Model, Summarization, Dependency Modeling, Link Analysis, Sequencing Analysis, Social Network Analysis.

Big Data Systems: Big Data Characteristics, Types of Big Data, Big Data Architecture, Introduction to Map-Reduce and Hadoop; Distributed File System, HDFS.

4: System Software and Operating System

System Software: Machine, Assembly and High-Level Languages; Compilers and Interpreters; Loading, Linking and Relocation; Macros, Debuggers.

Basics of Operating Systems: Operating System Structure, Operations and Services; System Calls, Operating-System Design and Implementation; System Boot.

Threads: Multicore Programming, Multithreading Models, Thread Libraries, Implicit Threading, Threading Issues.

CPU Scheduling: Scheduling Criteria and Algorithms; Thread Scheduling, Multiple-Processor Scheduling, Real-Time CPU Scheduling.

Deadlocks: Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Avoidance and Detection; Recovery from Deadlock.

Memory Management: Contiguous Memory Allocation, Swapping, Paging, Segmentation, Demand Paging, Page Replacement, Allocation of Frames, Thrashing, Memory-Mapped Files.

Storage Management: Mass-Storage Structure, Disk Structure, Scheduling and Management, RAID Structure.

File and Input/Output Systems: Access Methods, Directory and Disk Structure; File-System Mounting, File Sharing, File-System Structure and Implementation; Directory Implementation, Allocation Methods, Free-Space Management, Efficiency and Performance; Recovery, I/O Hardware, Application I/O Interface, Kernel I/O Subsystem, Transforming I/O Requests to Hardware Operations.

Security: Protection, Access Matrix, Access Control, Revocation of Access Rights, Program Threats, System and Network Threats; Cryptography as a Security Tool, User Authentication.

Virtual Machines: Types of Virtual Machines and Implementations; Virtualization.

Linux Operating Systems: Design Principles, Kernel Modules, Process Management, Scheduling, Memory Management, File Systems, Input and Output; Interprocess Communication, Network Structure.

Windows Operating Systems: Design Principles, System Components, Terminal Services and Fast User Switching; File System, Networking.

Distributed Systems: Types of Network based Operating Systems, Network Structure, Communication Structure and Protocols; Robustness, Design Issues, Distributed File Systems.

5: Software Engineering

Software Process Models: Software Process, Generic Process Model – Framework Activity, Task Set and Process Patterns; Process Lifecycle, Prescriptive Process Models, Project Management, Component Based Development, Aspect-Oriented Software Development, Formal Methods, Agile Process Models – Extreme Programming (XP), Adaptive Software Development, Scrum, Dynamic System Development Model, Feature Driven Development, Crystal, Web Engineering.

Software Requirements: Functional and Non-Functional Requirements; Eliciting Requirements, Developing Use Cases, Requirement Analysis and Modelling; Requirements Review, Software Requirement and Specification (SRS) Document.

Software Design: Abstraction, Architecture, Patterns, Separation of Concerns, Modularity, Information Hiding, Functional Independence, Cohesion and Coupling; Object-Oriented Design, Data Design, Architectural Design, User Interface Design, Component Level Design.

Software Quality: McCall's Quality Factors, ISO 9126 Quality Factors, Quality Control, Quality Assurance, Risk Management, Risk Mitigation, Monitoring and Management (RMMM); Software Reliability.

Estimation and Scheduling of Software Projects: Software Sizing, LOC and FP based Estimations; Estimating Cost and Effort; Estimation Models, Constructive Cost Model (COCOMO), Project Scheduling and Staffing; Time-line Charts.

Software Testing: Verification and Validation; Error, Fault, Bug and Failure; Unit and Integration Testing; White-box and Black-box Testing; Basis Path Testing, Control Structure Testing, Deriving Test Cases, Alpha and Beta Testing; Regression Testing, Performance Testing, Stress Testing.

Software Configuration Management: Change Control and Version Control; Software Reuse, Software Re-engineering, Reverse Engineering.

6: Computer Networks

Computer Networks: Network Topologies, Local Area Networks, Metropolitan Area Networks, Wide Area Network, Wireless Networks, Internet.

Network Models: Layered Architecture, OSI Reference Model and its Protocols; TCP/IP Protocol Suite, Physical, Logical, Port and Specific Addresses; Switching Techniques.

Functions of OSI and TCP/IP Layers: Framing, Error Detection and Correction; Flow and Error Control; Sliding Window Protocol, HDLC, Multiple Access – CSMA/CD, CSMA/CA, Reservation, Polling, Token Passing, FDMA, CDMA, TDMA, Network Devices, Backbone Networks, Virtual LANs. IPv4 Structure and Address Space; Classful and Classless Addressing; Datagram, Fragmentation and Checksum; IPv6 Packet Format, Mapping Logical to Physical Address (ARP), Direct and Indirect Network Layer Delivery; Routing Algorithms, TCP, UDP and SCTP Protocols; Flow Control, Error Control and Congestion Control in TCP and SCTP.

World Wide Web (WWW): Uniform Resource Locator (URL), Domain Name Service (DNS), Resolution - Mapping Names to Addresses and Addresses to Names; Electronic Mail Architecture, SMTP, POP and IMAP; TELNET and FTP.

Network Security: Malwares, Cryptography and Steganography; Secret-Key Algorithms, Public-Key Algorithms, Digital Signature, Virtual Private Networks, Firewalls.

7. Enterprise Resource Planning: Introduction, understanding of functional modules such as FICO, MM, HCM, PS etc. and technical modules – ABAP concepts, BASIS, BI/BW, ERP Post implementation activities and support.

8. Basic understanding of cyber security concepts.

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INDICATIVE SYLLABUS FOR WRITTEN TEST FOR THE POST OF

SR. ENGINEER (POWER SYSTEM) ADVERTISED VIDE NOTIFICATION NO. 02/2023

The Written test will comprise of objective-type-multiple-choice question containing 120 questions in 02 Parts i.e. Part-A & Part-B. The test will be held for 120 minutes duration (in one sitting) with following pattern:

1. **Part-A** will consist of : Quantitative Aptitude, Logical Reasoning

2. **Part-B** will consist of : Professional knowledge (Discipline related)

SOLAR ENERGY CORPORATION OF INDIA LIMITED
(A Government of India Enterprise)
6th Floor, Plate - B, NBCC Office, Block Tower -2, East Kidwai Nagar,
New Delhi – 110023
CIN No. U40106DL2011GOI225263

INDICATIVE SYLLABUS FOR WRITTEN TEST FOR THE POST OF

SECRETARIAL OFFICER ADVERTISED VIDE NOTIFICATION NO.: 02/2023

The Written test will comprise of objective-type-multiple-choice question containing 120 questions in 02 Parts i.e. Part-A & Part-B. The test will be held for 120 minutes duration (in one sitting) with following pattern:

1. **Part-A** will consist of : Quantitative Aptitude, Logical Reasoning

2. **Part-B** will consist of : Professional knowledge (Discipline related)

INDICATIVE SYLLABUS FOR WRITTEN TEST FOR THE POST OF

JR. ACCOUNTANT ADVERTISED VIDE NOTIFICATION NO.: 02/2023

The Written test will comprise of objective-type-multiple-choice question containing 120 questions in 02 Parts i.e. Part-A & Part-B. The test will be held for 120 minutes duration (in one sitting) with following pattern:

1. **Part-A** will consist of : Quantitative Aptitude, Logical Reasoning

2. **Part-B** will consist of : Professional knowledge (Discipline related)

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CIN No. U40106DL2011GOI225263

INDICATIVE SYLLABUS FOR WRITTEN TEST FOR THE POST OF

SUPERVISOR (CIVIL) ADVERTISED VIDE NOTIFICATION NO.: 02/2023

The Written test will comprise of objective-type-multiple-choice question containing 120 questions in 02 Parts i.e. Part-A & Part-B. The test will be held for 120 minutes duration (in one sitting) with following pattern:

1. **Part-A** will consist of : Quantitative Aptitude, Logical Reasoning

2. **Part-B** will consist of : Professional knowledge (Discipline related)