

INDICATIVE SYLLABUS FOR THE POSTS OF SCIENTIST ‘D’, SCIENTIST ‘C’, SENIOR TECHNICAL ASSISTANT, TECHNICAL ASSISTANT, JUNIOR TECHNICAL ASSISTANT

Level of questions in the question papers for the posts of Senior Technical Assistant, Technical Assistant and Junior Technical Assistant would be commensurate with the level of post.

S.No.	SYLLABUS	REMARKS
01	<p>PART ‘A’ - General Aptitude and Numerical Ability</p> <p>PART ‘B’ Introduction to Technologies in Electronics 1. Basics of Electronics Engineering and their applications 2. Digital circuits and systems 3. Analog and digital signal processing 4. Solid-state electronics 5. Electromagnetic field theory 6. Modern Electronics technologies and their applications</p> <p>Embedded Systems 1. Introduction to embedded systems and their applications 2. Embedded system design methodologies 3. Embedded processor architecture 4. Embedded Linux and programming 5. Real-time operating systems 6. Industrial automation 7. Interfacing with Sensors and actuators 8. Study of IoT using various platforms</p> <p>VLSI Technology 1. Introduction to VLSI Technology 2. MOS transistor fundamentals 3. CMOS circuit and layout design 4. CMOS fabrication technology 5. VLSI design methodologies and tools 6. Implementation of Digital Circuits using VLSI 7. Introduction to FPGA programming 8. FPGA-based design</p> <p>ASIC Design 1. Introduction to ASIC Design 2. RTL design using HDL (Verilog and VHDL) 3. Physical design methodologies and tools 4. ASIC Design Verification 5. Memory design in ASIC 6. System-on-Chip (SOC) Design 7. Low-power ASIC design</p> <p>Industries for Electronics Production 1. Overview of the semiconductor industry 2. Semiconductor manufacturing process 3. Assembly and Testing of electronics devices 4. Quality control and Reliability testing of electronic devices 5. Chipset design and production 6. Printed Circuit Board fabrication 7. Electronics Packaging Technologies</p> <p>Semiconductor Characterization Techniques 1. Electrical and Thermal Characterization Techniques 2. Optical and Magnetic Characterization techniques 3. Computational and Theoretical method of Semiconductor Characterization 4. Spectroscopy and Microscopy in Semiconductor Characterization 5. Photovoltaics and optoelectronics 6. MEMS and NEMS</p>	<p>-50% (PART ‘A’)</p> <p>-50% (PART ‘B’)</p>

Introduction to Computer Science

- Overview of computer science
- History of computer and evolution of technology
- Computer organization and architecture
- The role of algorithms in computer science
- Introduction to programming languages

Programming Fundamentals

- Variables, Data types, and expressions
- Control structures
- Arrays and strings
- Functions and procedures
- File handling operations

Object-Oriented Programming

- Introduction to object-oriented programming concepts
- Class and objects
- Inheritance
- Polymorphism
- Abstraction and Encapsulation

Data Structures and Algorithms

- Arrays and linked lists
- Stacks and queues
- Trees
- Graphs
- Sorting and Searching Algorithms

Database Management Systems

- Introduction to DBMS
- Data models
- Relational Database Management Systems (RDBMS) and SQL
- Normalization and Denormalization
- Database Security and privacy

Computer Networks

- Introduction to computer networks
- Network topology and protocols
- Network models, layering and architecture
- TCP/IP protocols and Data Link Layer protocols
- Network Security and Firewalls

Web Technologies

- Web development and web technologies
- HTML, CSS, and JavaScript
- PHP and Server-Side Scripting
- Backend database integration
- Web Security

Cloud Computing

- Cloud Computing and Cloud Services
- Introduction to Cloud Deployment models
- Public, private and hybrid clouds
- Cloud Computing Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS)
- Service-level agreement and Data Privacy

Artificial Intelligence and Machine Learning

- Introduction to Artificial Intelligence and Machine Learning
- Basic concepts and techniques in Machine Learning
- Supervised and unsupervised Learning
- Deep Learning and Neural Networks
- Natural Language Processing (NLP)

Cybersecurity and Ethical Hacking

- Cybersecurity and its importance
- Types of cyber threats and attacks
- Network Security and Firewalls
- Cryptography and Steganography
- Ethical Hacking and Penetration Testing

**INDICATIVE SYLLABUS FOR THE POSTS OF FINANCIAL CONTROLLER AND
SENIOR FINANCE OFFICER**

S.No.	SYLLABUS	REMARKS
01	<p>PART ‘A’</p> <p>(a) Verbal Ability (b) Quantitative Aptitude (c) Intellectual Potential (d) Computer Knowledge</p> <p>PART ‘B’ Subject knowledge covering following topics:</p> <p>a) Cost Management – Cost analysis b) Business Management (Managerial Skill) c) Financial Management - Framework for preparation and presentation of Financial statement and RISK Management d) Taxation laws and Practice (Direct Tax Law – Income tax, Indirect Tax law- Good and Service Tax Rates- Rates, Returns, Applicability) e) Auditing (Internal/statutory/C&AGI/Management etc.- Advance auditing) f) Economic Law g) GFR Rules 2017 (Procurement through GeM, Grant-in-Aid- Utilization certificate) h) Employee Provident Fund Rules and New Pension Scheme i) The payment of Gratuity Act 1972 j) Book Keeping and Accounts based on double entry system (Maintenance of Accounts- software- Finalization of Annual Accounts) k) Fundamental Rules & Supplementary Rules including General conduct of service Fixation of Pay. l) Delegation of Financial Powers Rules m) Right to information Act, 2005 and Right to Information (Regulation of Fee and Cost) Rules. n) Knowledge of PFMS o) Budget Principle, process and practice p) GeM Rules</p>	<p style="text-align: center;">-50% [PART ‘A’]</p> <p style="text-align: center;">-50% [PART ‘B’]</p>

INDICATIVE SYLLABUS FOR THE POST OF ASSISTANT

Syllabus outline is similar to Assistant Director (Admin). However, the level of questions in the question papers would be commensurate with the level of post.

S.No.	SYLLABUS	REMARKS
01	<p><u>PART ‘A’</u></p> <p>(a) Verbal Ability (b) Quantitative Aptitude (c) Intellectual Potential (d) Computer Knowledge</p> <p><u>PART ‘B’</u> Subject knowledge covering following topics:</p> <p>a) Establishment Matters covering Creation of Post, Age relaxation for Appointments, Recruitment through Employment Exchange, Recruitment by Direct Recruitment/Absorption/Deputation, Probation on Appointment, Ad-hoc Appointment/promotions, Casual Labour, Medical Examination on First Appointment and Domicile.</p> <p>b) Concessions in Appointments covering Post Based Roster, SC and ST, Socially and Educationally Backward Classes, Persons with Disabilities, Ex-Serviceman, Sportsmen and Compassionate Appointments.</p> <p>c) Service Matters of employees covering confirmation, seniority, Termination of Services of Temporary employees, Extension in services and Re-employment, Engagement of Consultants, Employment after Retirement, Regulation of Pay on Re-employment, Forwarding of Application for other Employment, Premature Retirement of Central Govt. Servants, Resignation, Voluntary Retirement, Retrenchment Procedure, Redeployment of Surplus Employees, Deputation (Duty) Allowance and Permanent Absorption in Public Sector Undertakings/Autonomous Bodies.</p> <p>d) Personal Matters of employees covering Annual Performance Assessment Report, Promotions – DPCs, Modified Flexible Complementing Scheme, Modified Assured Career Progression Scheme, proforma Promotions, Change of Name, Date of Birth and its Subsequent Alteration, Permission under CCS Conduct Rules, Enforcement of Service Bond on Quitting Service, Service Book and Personal Files and Posting of Husband and Wife at the Same Station.</p> <p>e) General Financial Rules – in relation to procurement and disposal of goods, Procurement of services, Contract Management.</p> <p>f) Fundamental Rules & Supplementary Rules.</p> <p>g) CCS (Pension) Rules and New Pension Scheme</p> <p>h) TA and LTC Rules</p> <p>i) CCS (Medical Attendance) Rules</p> <p>j) Provident Fund Rules</p> <p>k) Gratuity Rules</p> <p>l) Delegation of Financial Power Rules</p> <p>m) CCS (Leave) Rules / CCS (Joining Time) Rules</p> <p>n) CCS (CCA) Rules/ CCS (Conduct) Rules</p> <p>o) Labour and Industrial Laws in India. The Labour & Industrial Law (ID Act, Contract Labour (R&A) Act, Trade Unions, Payment of Gratuity/Payment of Wages/Minimum Wages Act/Relevant Provision of Factories Act)</p> <p>p) General Office Management covering Rules for Display of National Flag, Martyrs’ Day, Attendance and Punctuality, Holidays for Government Offices, Noting and Drafting, Forms and Procedure of Communication, Secret and Confidential Record Management, Security Instructions.</p> <p>q) Service Associations and Welfare covering CCS (Recognition of Service Associations) Rules, Joint Consultative Machinery, Facilities for Trade Union Activities, Duties and Responsibilities of Welfare Officers.</p> <p>r) Right to Information Act, 2005 and Right to Information (Regulation of Fee and Cost) Rules.</p> <p>s) Matters concerning Land and Building, Government Residential Quarters, Staff Cars, Contingent Expenditure, Territorial Army and Home Guards, Passport and Emigration, Incentives for Hindi including provisions of Official Languages Act. Workmen’s Compensation Act.</p> <p>t) GeM Rules</p>	<p>50% (PART ‘A’)</p> <p>50% (PART ‘B’)</p>

INDICATIVE SYLLABUS FOR THE POST OF JUNIOR ASSISTANT

S.No.	SYLLABUS
01	<p>a) General English & Verbal Ability</p> <p>b) Intellectual Potential</p> <p>c) Quantitative Aptitude</p> <p>d) Computer Knowledge</p> <p>For the post of Jr. Assistant, the incumbent will be required to qualify a Typing Test at a minimum speed of 25 words in Hindi or 30 words in English</p>

INDICATIVE SYLLABUS FOR THE POST OF STENOGRAPHER

S.No.	SYLLABUS
01	<p data-bbox="272 253 722 383">a) General English & Verbal Ability b) Intellectual Potential c) Quantitative Aptitude d) Computer Knowledge</p> <p data-bbox="225 421 1348 488">For the post of Stenographer, the incumbent will be required to qualify a Shorthand Test at a minimum speed of 80/100 words in Hindi or English.</p>

INDICATIVE SYLLABUS FOR THE POST OF ASSISTANT DIRECTOR (FINANCE)

S.No.	SYLLABUS	REMARKS
01	<p>PART 'A'</p> <ul style="list-style-type: none"> a) Verbal Ability b) Quantitative Aptitude c) Intellectual Potential d) Computer Knowledge <p>PART 'B'</p> <p>Subject Knowledge covering following topics:</p> <ul style="list-style-type: none"> - Maintenance of Cash Book - Preparation of Bank Reconciliation Statement - Posting of Ledger Accounts - Preparation of Trail Balance and Final Accounts - Principles of Auditing - Income Tax and Service Tax Rules - General Financial Rules - Fundamental Rules & Supplementary Rules - CCS (Pension) Rules and New Pension Scheme - TA and LTC Rules - Medical Attendance Rules - Provident Fund Rules - Gratuity Rules - Delegation of Financial Power Rules - CCS (Joining Time) Rules - Right to Information Act, 2005 and Right to Information (Regulation of Fee and Cost) Rules - Matters concerning Land and Building, Government Residential Quarters, Staff Cars - Contingent Expenditure - Knowledge of PFMS - GeM Rules 	<p>-50% [PART 'A']</p> <p>-50% [PART 'B']</p>

INDICATIVE SYLLABUS FOR THE POST OF ASSISTANT DIRECTOR (ADMIN)

S.No.	SYLLABUS	REMARKS
01	<p>PART 'A'</p> <p>a) Verbal Ability b) Quantitative Aptitude c) Intellectual Potential d) Computer Knowledge</p> <p>PART 'B'</p> <p>Knowledge of Central Government Rules and Procedures / Instructions covering following topics:</p> <ul style="list-style-type: none"> - Establishment Matters covering Creations of Post, Age relaxation for Appointments, Recruitment through Employment Exchange, Recruitment by Direct Recruitment / Absorption / Deputation, Probation on Appointment, Ad hoc Appointment / promotions, Casual Labour, medical Examination on First Appointment and Domicile. - Concessions in Appointment covering Post Based Roster, SC and ST, Socially and Educationally Backward Classes, Persons with Disabilities, Ex-Servicemen, Sportsmen and Compassionate Appointments. - Service Matters of employees covering confirmation, seniority, Termination of Service of Temporary employees, Extension in services and Re-employment, Engagement of Consultant, Employment after Retirement, Regulation of Pay on Re-employment, Forwarding of Applications for other Employment, Premature Retirement of Central Govt. Servants, Resignation, Voluntary Retirement, Retrenchment Procedure, Redeployment of surplus Employees, Deputation (Duty) Allowance and Permanent Absorption in Public Sector Undertakings / Autonomous Bodies. - Personal Matters of employees covering annual Performance Assessment Report, Promotions – DOCs, Modified Flexible Complementing Scheme, Modified Assured Career Progression Scheme, proforma Promotions, Change of Name, Date of Birth and its Subsequent Alteration, Permission under ccs conduct Rules, Enforcement of Service Bond on Quitting Service, Service Book and personal Files and Posting of Husband Wife at the Same Station. - General Financial Rules – in relation of procurement and disposal of goods, Procurement of services, Contract Management. - Fundamental Rules & Supplementary Rules. - CCS (Pension) Rules and New Pension Scheme. - TA and LTC Rules - CCS (Medical Attendance) Rules - Provident Fund Rules - Gratuity Rules - Delegation of Financial Power Rules - CCS (Leave) Rules/ CCS (joining time) Rules - CCS (CCA) Rules/ CCS (conduct) Rules - Labour and Industrial Laws in India. The Labour & Industrial Laws (ID Act, Contract Labour (R&A) Act, Trade Unions, Payment of Gratuity / Payment of Wages / minimum wages Act / Relevant provisions of Factories (Act) - General Office management Covering Rules for Display of National Flag, Martyrs' Day, Attendance and Punctuality, Holidays for Government Offices, Nothing and Drafting, Forms and Procedure of Communication Secret and Confidential Records, Records Management, Security Instructions. - Service Associations and Welfare covering CCS (Recognition of Service Associations) Rules, Joint Consultative Machinery, facilities for Trade Union Activities, Duties and Responsibilities of Welfare Officers. - Right to information Act, 2005 and Right to Information (Regulation of Fee and Cost) Rules. - Matters concerning Land and Building, Government Residential Quarters, Staff Cars, 'Contingent Expenditure, Territorial Army and Home Guards, Passport and Emigration, Incentives for Hindi including Provisions of Official Languages Act, Workmen's Compensations Act. 	<p style="text-align: center;">-50% [PART 'A']</p> <p style="text-align: center;">-50% [PART 'B']</p>

INDICATIVE SYLLABUS FOR THE POST OF SENIOR ASSISTANT (ACCOUNTS)

S.No.	SYLLABUS	REMARKS
01	<p>PART 'A'</p> <ul style="list-style-type: none"> a) Verbal Ability b) Quantitative Aptitude c) Intellectual Potential d) Computer Knowledge <p>PART 'B'</p> <p>Subject Knowledge covering following topics;</p> <ul style="list-style-type: none"> a) Maintenance of Cash Book b) Preparation of Bank Reconciliation Statement c) Posting of Ledger Accounts d) Preparation of Trial Balance and Final Accounts e) Principles of Auditing f) Income Tax and Service Tac Rule g) General Financial Rules h) Fundamental Rules & Supplementary Rules i) CCS (Pension) Rule and New Pension Scheme j) TA and LTC Rules k) Medical Attendance Rules l) Provident Fund Rules m) Gratuity Rules n) Delegation of Financial Power Rules o) CCS (Joining Time) Rules p) Right to information Act, 2005 and Right to information (Regulation of Fee and Cost) Rules. q) Matters Concerning Land and Building, Government Residential Quarters, Staff Cars r) Contingent expenditure. s) Knowledge of PFMS t) GeM Rules 	<p>-50% [PART 'A']</p> <p>-50% [PART 'B']</p>

