



**Notice w.r.t. the Advertisement Notice No. 01 of 2024 dated: 06-02-2024 and
02 of 2024 dated: 12-02-2024**

It is hereby notified for the information of all concerned who have applied for the different posts advertised vide Advertisement Notices No. 01 of 2024 dated: 06-02-2024 and 02 of 2024 dated: 12-02-2024 that the syllabi for the posts advertised vide aforementioned advertisement notices is notified as per the details given in **Annexure "A" and Annexure "B"** to this notice.

Further, the criteria for shortlisting of candidates for interview and final selection shall be as follows:

- (a) "20 candidates shall be shortlisted for one post and 05 more candidates for every additional post".**
- (b) The shortlisting of the candidates for interview for the post of Assistant Librarian and Assistant Director Physical education shall be made as per the criteria / parameters of UGC Regulations-2018 (Appendix II (Table 3A)).**
- (c) The final selection for the post of Librarian, Finance Officer, Deputy Registrar and Deputy Finance Officer shall be made on the basis of performance in the interview only and all eligible candidates shall be called to appear in the interview.**
- (d) The following Criteria shall be adopted for final selection for the posts where the written test is conducted:**

Written Test (80)	Interview performance (20)	Total (100)
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- (e) For the post of Junior Assistant, type test shall also be conducted for those candidates only who will qualify the written test. Only those candidates who will qualify the type test shall be considered for interview. The type test is qualifying in nature and no points shall be awarded for it. Further, the criteria for qualifying type test is typing speed of 35 words per minute with 90% accuracy on computer.**

**Sd/-
Registrar**

No. IUST/Reg/Adm/E/24/112
Dated: 04-04-2024



ANNEXURE- "A"

Syllabus for the post of (i) Assistant Registrar (ii) Assistant Finance Officer (iii) Training & Placement Officer (iv) Manager (CIED) and (v) Assistant Manager (CIED) advertised vide advertisement notice No. 01 of 2024 dated: 06-02-2024 and 02 of 2024 dated: 12-02-2024.

PART-A

(Maximum Marks 30)

(Minimum / Qualifying Marks 15)

a) General Knowledge:

Indian History, Indian Geography, Indian Economy, Indian Polity & Constitution, Current Affairs-India & World.

b) General English

Vocabulary, Sentence structure, synonyms, antonyms, and its correct usage. Basic comprehension and writing ability. One-word substitution, Improvement of Sentences, Spellings, Grammar, Sentence Completion, Phrases and Idiomatic use of words.

c) Numerical Ability

Number Systems, Computation of Whole Numbers, Decimals and Fractions and relationship between Numbers, Fundamental arithmetical operations, Percentages, Ratio and Proportion, Averages, Interest, Profit and Loss, Discount, Mensuration, Time and Distance, Ratio and Time, Time and Work.

d) General Intelligence & Reasoning

Questions of verbal, non-verbal, and analytical types, analogies, syllogism, similarities, differences, missing numbers, characters and sequences, space visualization, problem-solving, analysis, decision making, visual memory, discrimination, observation, relationship concepts, direction sense, coding decoding, arithmetical reasoning, verbal and figure classification, data representation, and analysis, arithmetical number series.

e) Fundamentals of Computer Sciences.

Hardware & Software, Input and output devices, Operating systems, Computer languages and basics of networking, M.S Office and its applications, E-mail & Internet, E-Office, Digitization, File tracking systems, Role of Information Technology in Governance, ERP.



PART-B

(Maximum Marks 70)

(Minimum / Qualifying Marks 35)

Domain Knowledge:

(1) Assistant Registrar

- Overview of Higher Education in India
- General Financial Rules- and purchase procedures
- New Pension Scheme
- J&K Civil Service Regulations. J&K Civil Service Leave Rules, 1979.
- UT Universities' Acts & Statutes.
- UGC Act 1956 / UGC Regulations 2018 on minimum qualifications for appointment of teachers and other academic staff in Universities and Colleges / UGC Regulations 2022 on Minimum Standards and Procedures for Award of Ph.D. Degree.
- Higher Education Regulatory Bodies, UGC, AICTE, CoA, and INC.
- National Educational Policy-2020
- Reservation and Concessions to SCs/STs/OBCs/PWDs/EWSs
- NAAC.
- The Right to Information Act, 2005.
- Government e-Marketplace.
- Office Procedures & Office Management.
- University Ranking (NIRF, IIG).
- University Management System / ERP.

(2) Assistant Finance Officer

- GFR 2017 (Purchase of Goods, Services and Works).
- Government e-Marketplace, Public Finance Management System.
- E-Tendering, GST, Taxation System in India.
- UGC Regulations 2018 on minimum qualifications for appointment of teachers and other academic staff in Universities and Colleges.
- J&K Civil Service Regulations. J&K Civil Service Leave Rules, 1979.
- Fixation of Pay and other benefits.
- Budgeting.
- Internal Audit.
- Trading, Profit & Loss Accounts and Balance Sheet.
- Self Balancing, Ledgers and Sectional Balancing.
- Double Entry Accounting System
- Capital & Revenue Receipts & Payments



- Income & Expenditure Accounts.
- Depreciation, Reserve & Provisions., Rectification of Errors.
- Branch and Departmental Accounts.
- Bank Reconciliation Statement, Compilation of Final Accounts
- NEP-2020.
- Use of Tally or other accounting softwares.
- University Management System / ERP.

(3) Training & Placement Officer

- Recruitment & Selection Process.
- Methodology of training and development
- Industrial relations management
- Human resource development and planning
- Personal management concepts
- Organizational behavior
- Human resource analytics
- HR information systems
- Fundamentals of HR management
- Environment and management
- Capability and capacity building
- Employee relations
- Office Administration
- Negotiation and conflict management
- Social Media and its role in Placement & Training.
- Effective communication & Presentation Skills.
- Professional Proposal Development.
- Workplace ethics, Time Management & Networking skills.

(4) Manager and Assistant Manager (CIED)

- Idea generation & prototype Development
- Technological and Non- technological innovation and process
- Entrepreneurship
- Social innovation and Entrepreneurship
- Intellectual Property Right (IPR) & Patents/ National IPR policy 2016.
- Commercialization of Innovations
- Startup and Venture development
- Innovation and Startup ecosystem
- Pre- Incubation and Incubation stages



ISLAMIC UNIVERSITY OF SCIENCE & TECHNOLOGY, KASHMIR

- Entrepreneurial opportunities, attitude, traits and tendencies.
- Investment, Angel, VC fund System
- Govt. Schemes and funding support to ideas, innovations and startups.
- Current trends, development and general awareness on innovation and startup
- Innovation-Entrepreneurship Relationship
- Characteristics of Innovation and Entrepreneurship
- Role of Innovation Entrepreneurship
- Benefits of Innovation Entrepreneur
- Traits and Tips for Innovative Entrepreneurship
- National Innovation & Start-up Policy (NISP) 2019.
- Science, Technology & Innovation Policy 2013.



ANNEXURE- "B"

POST: (i) Legal Assistant (ii) Accounts Assistant (iii) Junior Technical Assistant (DIC, Architecture, Planning, Geomatics, CIED) (iv) IT Assistant (v) Draftsman (vi) Junior Assistant (vii) Sports Assistant (viii) Medical Assistant (ix) Works Supervisor and (x) Workshop Mechanic) advertised vide advertisement notice No. 01 of 2024 dated: 06-02-2024 and 02 of 2024 dated: 12-02-2024.

PART-A

(Maximum Marks 30)

(Minimum / Qualifying Marks 15)

(A) General English

- (i) Comprehension
- (ii) Editing / Proof Reading.
- (iii) Re-arranging of jumbled sentences
- (iv) Narration
- (v) Modals
- (vi) Articles
- (vii) Paragraph writing with blanks to be filled in with: i. Phrases ii. Pronouns iii. Homonyms/Homophones etc.
- (viii) Clauses
- (ix) Punctuation
- (x) Synonyms and antonyms
- (xi) Idioms and phrases.
- (xii) Uses of Prepositions
- (xiii) Active & Passive Voice.
- (xiv) One-word substitution.
- (xv) Grammar: Noun, Pronoun, Adjectives, Verb, Preposition and Conjunction.

(B) General Knowledge with special reference to JK UT.

- (i) Current Events of National and International importance
- (ii) Political & Physical divisions of India
- (iii) Constitution of India.
- (iv) Indian Culture, Heritage and Freedom Struggle/Movement.
- (v) Demography- Census, its features and functions.
- (vi) Important Rivers & Lakes in India.
- (vii) Weather, Climate, Crops, Means of Transport of India.
- (viii) J&K UT: a) History b) Economy c) Geography- (Weather, Climate, Crops, Rivers, Lakes, Flora, Fauna etc.) d) Heritage & Culture e) Important Tourist Destinations.



(C) Numerical and Reasoning Ability.

- (i) Analogies-Semantic, symbolic/Number and Figural.
- (ii) Similarities and differences.
- (iii) Word Building
- (iv) Relationship Concepts.
- (v) Number Series
- (vi) Coding & Decoding
- (vii) Number system,
- (viii) Time and distance, time and work.
- (ix) Averages, Percentages, Profit & Loss, Ratio & proportions.
- (x) Simple/Compound interest.
- (xi) Linear equations with two variables.

(D) Basic Concepts of Computers.

- (i) Fundamentals of Computer Sciences: Hardware & Software, Input and output devices, Operating systems, Computer languages and basics of networking.
- (ii) M.S Office and its application.
- (iii) E-mail & Internet.
- (iv) E-Office, Digitization, File tracking systems, Role of Information Technology in Governance, ERP.



PART-B

(Maximum Marks 70)

(Minimum / Qualifying Marks 35)

Domain Knowledge:

(1) Draftsman

(i) Technical Drawing: Basic principles of technical drawing, Orthographic projection, Isometric and perspective drawings, Dimensioning and scaling, Sectional views. Civil Engineering Drawing and Interpretation: civil engineering drawings, including plans, sections, and elevations, symbols and conventions used in civil engineering drawings, Dimensioning and scaling techniques. Drawing of carpentry joints and Electrical wiring, drawing of floors, slabs, vertical movements (viz.stair, lift well, ramp and escalator), drawing of different types of roof truss. Drafting of Doors, Windows, hand railing, wash basin, and plumbing joints. Provision of safety aspects like Occupational health and Safety, Fire extinguishers, First Aid etc.

(ii) Surveying in Civil Engineering: Leveling: Definition of terms such as level surface. level line, horizontal line, datum surface. Terms used in leveling: foresight, intermediate sight, back sight. change point, height of collimation. Different site survey (using Chain & tape, Prismatic compass, Plane table, leveling instrument, Theodolite), field book entry, plotting, mapping, calculation of area.

(iii) Measurement and Estimation: Estimating and Cost analysis of different types of buildings and structures, estimation techniques and cost calculation methods, units and conversions relevant to construction.

(iv) Computer Applications: Computer applications relevant to drafting, Familiarity with software applications used in drafting and design, Basic troubleshooting skills related to drafting software. CAD (Computer-Aided Design) software such as AutoCAD, SolidWorks, Basic tools and functions in CAD software.

(v) Mathematics: Basic mathematics including geometry and trigonometry relevant to drafting, Calculation of dimensions, angles, and proportions

(2) Medical Assistant

- (i) Basic Medical information, Drugs and Antibiotics, their properties and uses.
- (ii) Pharmaceutical Process and methods
- (iii) First Aid and Home Nursing, Health Education, emergency health care services
- (iv) Structure and functions of the body.
- (v) Cardio Pulmonary Resuscitation (CPR)
- (vi) Wounds, Electric shock, Asphyxia, etc.
- (vii) Use of common medicines, home nursing.



- (viii) treatment of fractures, strains and sprains and application of splints.
- (ix) Community Pharmacy and Management.
- (x) Sterilizations and disinfection.
- (xi) Health Education.
- (xii) Public health & hygiene.
- (xiii) Anatomy and Physiology, Public health & Hygiene, Diseases, etc.
- (xiv) National Health Programmes.
- (xv) Nutrition and metabolism.
- (xvi) Nursing in special diseases.
- (xvii) Immunity and infectious diseases.
- (xviii) Special drugs their control and administration.

(3) Sports Assistant

(i) Introduction and Meaning, Definition and Scope of Physical Education

Introduction, Historical Development of Physical Education, Aims and Objective of Physical Education, Importance of Physical Education, Foundations of Physical Education, Principles of Physical Education; Biological, Social and foundations of Physical Education Psychological.

(ii) EDUCATIONAL TECHNOLOGY AND METHODS OF TEACHING IN PHYSICAL EDUCATION

Introduction, teaching methods & teaching aids, Tournaments, Lesson Planning: Meaning, Type, principles and lesson plan. General, particular / specific and coaching lesson plan.

(iii) KINESIOLOGY AND BIOMECHANICS

Introduction to Kinesiology and Sports Biomechanics, Fundamentals Concept of Anatomy and Physiology, Mechanical Concepts: Newton's Laws of Motion and their application in sports. Projectile: Factors influencing projectile trajectory

(iv) MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION

Introduction to Test, Measurement Evaluation, Physical Fitness Tests, AAHPER youth fitness test, JCR test, Cooper's 12-minute run/ walk test, Harward Step test, Motor Fitness Test, Barrow motor ability test. Sports Skill Tests Lockhart and McPherson badminton test, Johnson basketball test, McDonald soccer test.

(v) SPORTS TRAINING

Introduction to Sports Training, Methods of Sports Training, Training Components, Training Process, Training program and planning

(vi) SPORTS PSYCHOLOGY AND SOCIOLOGY

Introduction, Learning, Personality, Motivation, Relation between Social Sciences & Physical Education, Personality, Motivation.

(vii) SPORTS MEDICINE, PHYSIOTHERAPY AND REHABILITATION

Meaning, Definition, and Importance of Sports Medicine, Physiotherapy, Hydrotherapy and Massage, Hydrotherapy: Meaning and Methods, Cryotherapy, Contrast Bath, Whirlpool Bath, Steam Bath, Sauna Bath, Hot Water Fomentation, Classification of Therapeutic exercise: Passive Movements (Relaxed, Forced and passive stretching).



(viii)SPORTS MANAGEMENT

Concept of Management, Functions of management, Leadership, Sports Management, Sports Management in Schools, colleges and Universities. Planning, Directing and Controlling school, college and university sports programmes. Factors effecting the planning.

(ix)CONCEPTS OF YOGA

Meaning, Definition & Scope of Yoga, Aims, Objectives and functions of Yoga, Early Yoga Practices, Basic Yogic Methods, *Asana*: Classification of *Asanas*, Sitting, Standing, Lying, Inverted *asanas*. Benefits of *Asanas*: Effects of *Asanas* on general health. *Pranayama*: Importance & impact on Muscular, Cardio Respiratory and Nervous System. Relaxation and meditation: Importance & impact on body at work and body at rest.

(x)Knowledge of sports/Games

Athletics, Badminton, Football, Cricket, Volleyball, Martial arts, Basketball, Table Tennis, Carrom, Chess.

(4) Accounts Assistant

- (i) Introduction to Financial Accounting and its terms.
- (ii) Accounting Equation.
- (iii) Single entry system of accounting.
- (iv) Cash Book, Different forms of Cash Book.
- (iv) Concept of Social Accounting and Social Audit
- (v) Cash based system of accounting.
- (vi) Voucher Approach in Accounting.
- (vii) Bank Reconciliation Statement.
- (viii) Financial Computation of Ratios (Profitability, solvency and liquidity Ratios) Statements.
- (ix) Partnership Accounting.
- (x) Journal & Ledger Accounts.
- (xi) Elements of Double entry Book Keeping.
- (xii) Trading Account.
- (xiii) Profit & Loss Account, Balance Sheet.
- (xiv) Trial Balance and its compilation.
- (xv) Indian Financial Management System.
- (xvi) Cost Management
- (xvii) Cost Accounting
- (xviii) Developments in Accounting
- (xix) Relationship Between Numbers.
- (xx) Percentages.



- (xxi) Averages.
- (xxii) Use of Tables and Graphs.
- (xxiii) Budgeting.
- (xxiv) Fundamental Arithmetical Operations.
- (xxv) Mensuration.
- (xxvi) Time & Work.
- (xxvii) Ratio & Proportion.
- (xxviii) Decimals and Fractions.
- (xxix) Public Financial Management System (PFMS).
- (xxx) Income tax
- (xxxi) GST
- (xxxii) Use of tally.

(5) JTA- (CIED)

- **Technical Knowledge and Business and Management Skills:** project development and management, Integration of technology and innovation in entrepreneurial ventures, business administration principles and practices, Application of management methodologies in project planning and execution, Strategic thinking and decision-making in entrepreneurial contexts
- **Entrepreneurship and Start-up Concepts:** entrepreneurship theories and frameworks, Strategies for identifying market opportunities and creating value propositions, funding mechanisms and investment strategies for start-ups
- **Project Development and Management:** project management techniques and methodologies, project scheduling, budgeting, and resource allocation, Risk assessment and mitigation strategies in project management
- **IPR:** Types of IPR like trademark, copyright etc., The Patents Act, 1970 (incorporating all amendments till 23-06-2017): Chapter 1: Preliminary, Chapter 2: Inventions Not Patentable, Chapter 3: Applications for Patents, Chapter 4: Publication and Examination of Applications. The Patents Rules, 2003 (incorporating all amendments till 21-09-2021): Short title and commencement, Definitions, Types of Forms, Form Numbers, Use of Forms, Timelines for different Forms, Types of Applicants, Different Fees based on Type of Applicants, Different Stages of Patent Filing, Prescribed particulars, Appropriate office, Address for service, Leaving and serving documents, Fees, Forms, Filing of documents and copies, etc. The Designs Act 2000: Chapter 1: Preliminary, Chapter 2: Registration of Designs. Design Rules, 2001 (incorporating The Designs (amendment), Rules, 2021): Short title and commencement, Definitions, Types of Forms, Form Numbers, Use of Forms, Timelines for different Forms, Types of Applicants, Different Fees based on



Type of Applicants, prescribed particulars, Appropriate office, Address for service, Leaving and serving documents, Fees, Forms, Filing of documents and copies, etc

(6) Junior Technical Assistant (Geomatics)

(i) Remote Sensing, Platforms and Sensors

Definitions, Process and components of Remote Sensing System, EMR wavelength regions and their applications, EMR interactions with atmosphere Earth Surface Features; Remote Sensing Scenario in Indian Context; Framing and Scanning System; Sensor Resolutions; Multi-band concepts and False Colour Composites; Ground, Airborne and Space borne Platforms; Specification of some popular coarse; moderate and high resolution satellites – IRS, Landsat, SPOT; IKONOS, Cartosat, Quickbird etc.

(ii) Fundamentals of Geographic Information System

Basics and components of GIS; Spatial and Attribute Data; Raster and Vector data structures; Nature and Source of GIS data, Methods of spatial and attribute data capture; Detecting and correcting errors, Re-projection, Transformation and Generalization, Edge matching and Rubber sheeting, Topology.

(iii) Digital Cartography

Concept of Digital Cartography; Map Scales; Projection Systems; Categories of maps; Cartographic Design Issues, Map Compilation and Composition, Generalization, Visualization of geospatial data- 2D and 3D visualization.

(iv) Photogrammetry

Fundamentals of aerial photography; Vertical and Oblique aerial photography; Scale, Geometry and Ground Coverage of Aerial Photographs; Stereoscopic vision and Image Parallax; Digital Elevation Model (DEM), Digital Orthophotos; Digital photogrammetry; Hardware & software requirements; Image measurement; Mosaics of DTM & Ortho images.

(v) Surveying and Global Positioning System

Conventional field survey techniques; Surveying Instruments-Plane Table, Theodolite traversing, Total Station; GNSS Constellations- Regional and Global, GPS signals and data; GPS Positioning types; GPS Surveying Methods and Accuracy; GPS Application in Surveying and Mapping.

(vi) Fundamentals of Digital Image Processing

Digital Image-Source & data Formats, Hardware and Software Consideration; Image Pre-processing; Contrast Manipulation; Spatial Filtering; Band Ratioing and Differencing, Principal Component Analysis; Image Fusion.

(vii) Advanced Digital Image processing

Hard and Soft Classification System, Unsupervised Classification and Supervised Classification; Hybrid Classification, Artificial Neural Networks (ANN), Spectral Mixture Analysis, Fuzzy Classifiers; *Accuracy Assessment*: Sampling techniques, Error Matrix, Kappa Statistics.



(viii) Microwave Remote Sensing

Basic Principles; Space-borne and Air-borne Radar Systems; Synthetic Aperture Radar (SAR); Sensor and Target Characteristics; SAR Interferometry.

(ix) Hyperspectral Remote Sensing and Lidar

Basic principles of Spectroscopy; Hyperspectral sensors and platforms; Sensor specifications; Hyperspectral Data Processing; LIDAR: Principles, data processing and platforms, Laser and Scanning System; Accuracy of Lidar measurements.

(x) Geospatial Data Management and Analysis

Geospatial Data models and Conversions; Spatial Database concepts and Database Management System. *Spatial Analysis*: Neighborhood Analysis, Connectivity Analysis, Overlay Analysis; Errors and Uncertainty in GIS data: Positional and Attribute Accuracy; Web and Mobile GIS; Open Source GIS Softwares; Basic programming and problem solving in C and Python: logical, relational, conditional operators, Control statements and Loops; Global and Regional Geospatial databases.

(7) Junior Technical Assistant (Planning)

(i) Planning Theory and Techniques

Understanding Land Use Planning; Various Types of Planning; Theories of Urbanization (Including Concentric Zone Theory, Sector Theory, Multiple Nuclei Theory, and Contemporary Theories); William Alonso's Land Use and Land Value Theory; Principles of Regional Planning; Regional Planning in the Context of India; Spatial Standards; Techniques for Preparing Base Maps; Conducting Physical Surveys; Techniques for Plan Preparation; Advanced Methods in Aerial Photography; Photogrammetry; Photo Interpretation; Remote Sensing and GIS Applications

(ii) Urban Sociology and Economics of Planning

Fundamental Concepts of Society; Understanding Neighborhoods; Principles of Urban and Regional Economics; Macroeconomic Concepts; Economies of Scale

(iii) Environmental Planning

Relationship between Environment and Development; Identifying Environmental Risks; Urban Eco-System Approach; Environmental Impact Assessment; Principles of Sustainable Planning

(iv) Site and Land Development

Basics of Surveying; Surveying Principles; Different Types of Surveys; Classification of Surveys and Maps; Key Principles of Land Surveying; Introduction to Chain Surveying and Leveling; Surveying Instrumentation

(v) Housing and Community Planning

Housing Standards; Relevant Policies and Programs; Emerging Issues and Priorities in Urban Housing Areas; Financial Policies in Urban Housing



- (vi) **Project Formulation and Implementation**
Methodologies for Project Identification; Formulating Feasibility and Detailed Project Reports; Understanding; Risk and Uncertainty; Financing Methods; Project Evaluation and Monitoring
- (vii) **Planning Legislation and Legal Framework**
Evolution of Planning Legislation; Importance of Land Development Control; Implications of 73rd and 74th; Constitutional Amendments; Environmental Protection Act; Land Acquisition Act; Model Town Planning; Legislation (Building Bye-laws); Regional Planning Legislation; Town and Country Planning Act; Urban Planning and Development Authorities Act; Municipal Acts and Rules
- (viii) **Traffic and Transportation Planning**
Challenges of Urbanization and Transport; Designs for Urban and Regional Roads; Surveys and Analytical Techniques; Geometric Design Principles for Roads and Intersections; Relationship between Land Use and Transportation; Traffic Management Strategies; Planning and Managing Transport Systems; Regional Transport Systems
- (ix) **Planning for Disaster Risk Mitigation and Management**
Planning for Risk-Sensitive Land Use; Assessing and Mitigating Disaster Risks; Promoting Disaster-Safe Construction Practices; Compliance with Building Codes and Guidelines
- (x) **Planning and Management of Informal Sector**
Understanding Urban Poverty; Alternative Approaches for Providing Basic Services to the Urban Poor; Impact of Migration on the Informal Sector; Consequences of Spontaneous Urban Growth.

(8) IT Assistant

- (i) **Basics of Information Technology:** Installation concept and precautions to be observed while installing the system and software. Introduction about Operating Systems such as Windows and Linux (RHEL/Ubuntu), Android, MAC OS, IOS. Basics of File storage and Network management. Information gathering requirement and feasibility analysis, data flow diagrams, process specifications, input/output design, process life cycle, planning and managing the project, design.
- (ii) **Digital Computer Principles:** Number systems- Binary, Decimal, Octal, and Hexadecimal Conversion, Arithmetic operations, Boolean expression, simplification, Postulates and theorems, Simplifications, K- map, Combinational Logic circuits – Adder, Subtractor, Multiplexer, DE multiplexer, Encode, Decoder, Sequential circuits – SR, JK, T, D, flip flops, shift registers, Asynchronous, synchronous and counters.
- (iii) **Computer Organization and Architecture: Multiprocessors** and microcomputers, Machine Instructions and addressing mode. ALU and data-path, CPU control design, Memory interface, I/O interface (Interrupt and DMA mode), Cache and main memory, Secondary storage, Semiconductor memory – Internal organization, SRAM, DRAM, SDRAM, Rambus Memory, ROM Technology, virtual memory, Instruction sequencing, Instruction execution, Hardwired control and microprogrammed control, micro instructions, Instruction pipelining.



- (iv) **Programming, Data Structures and Databases:** Programming in C, Functions, Recursion, Parameter passing, Scope, Binding; Data types, Arrays, Stacks, Queues, Linked Lists, Trees, Binary search trees, Binary heaps. ER-model, Relational model (relational algebra, tuple calculus), Database design (integrity constraints, normal forms), Query languages (SQL) basics.
- (v) **Computer Networks:** IOS/OSI stack, LAN technologies (Ethernet, Token Ring), flow and error control techniques, Routing algorithm, Congestion Control, TCP/UDP and sockets IP (v4) Application layer protocol (ICMP, DNS, SMTP, POP, FTP, HTTP, HTTPS): Basic concept of hubs, switches, gateways and routers. Joining a workgroup/domain, File sharing and troubleshooting, Remote Access, Basics of Wi-Fi, Internet security. Cellular telephony basics(4g/5g). Basic concepts of public key and private key cryptography. Error Detecting: Source of errors in data communications, effects of errors, data error rate and its dependency on data transfer rates. Communicating Methods and Standards. Multiplexed lines, time division multiplexing and demultiplexing.
- (vi) **Multimedia:** Introduction to multimedia: Hypertext, hypergraphics, animation, applications, science and technology, kiosks, business and games Multimedia Hardware: Multimedia PC configuration, features and specifications of sound and video interfaces, OCR, touch-screen, scanners, digital cameras, speakers, printers, plotters, optical disks and drives. Multimedia Files: Image and sound file formats, multimedia file formats, compression, standards and techniques, features of software to read and write such files.

(9) JTA Architecture

- (i) **Principles and Elements of Design:** Principles: Scale, Proportion, Symmetry, Harmony, etc. Elements: Point, Line, Plane, Volume.
- (ii) **Drawing:** Perspective and its types, one point, two point, three point perspectives, Projections.
- (iii) **Building Materials:** Properties and uses of: Bricks, Stone, Cement, Concrete, Timber, etc. Brick Bonding: English Bond, Flemish Bond, Rattrap Bond. Stone Masonry: Ashlar, Random Rubble, etc. Properties of Concrete: Setting time, Mixes and grades, Curing. Properties of Timber: Tensile and Compressive strength, Seasoning, Joinery. Properties of Steel: Tensile strength, Reinforcing material in RCC.
- (iv) **Arches:** Springing line, Intrados and extrados, keystone, lateral thrust of an arch, various types of arches, semicircular arch. 2 centered arch (Gothic arch), 3 centered arch (basket handle arch), 4 centered arch (Islamic or Tudor arch).
- (v) **History of architecture:** Ancient river valley civilizations, e.g Nile valley civilization, Indus valley civilization, Chinese civilization, Mesopotamian civilization. Greek and Roman architecture: various orders of Greek architecture: Doric, ionic, corinthian. Roman arches, Vaults and Roman concrete. Early Christian architecture- Basilica: Romanesque architecture, piers, Gothic-Cathedral architecture: Flying Buttresses.



Islamic Architecture: Various features, Arabesque, calligraphy, geometrical patterns, muqarnas.

- (vi) **Building sciences:** Climate responsive architecture, thermal comfort, ambient temperature, Weather and climate, R value and U value, Sun path diagrams.
- (vii) **Theory of structures:** Bending moment, shear forces, stresses, buckling, tensile and compressive strength etc.
- (viii) **Acoustics:** Echo, Reverberation Time, Flutter. Auditorium Design: Features such as Raking, Aisles, Stage, Backstage.
- (ix) **Town planning:** Garden city, town planning of Chandigarh, Theory of Patrick Geddes, Radburn design, master planning.
- (x) **Project Management:** Critical Path Method (CPM), Program Evaluation and Review Technique (PERT). Contracts.
- (xi) **Architecture CAD and Software:** Basic Commands of AutoCAD, Revit, Google Sketchup. Basic Features of Photoshop.

(10) Junior Technical Assistant (DIC)

- (i) **Electric circuits:** Network elements: ideal voltage and current sources, dependent sources, R, L, C, M elements; Network solution methods: KCL, KVL, Node and Mesh analysis; Network Theorems: Thevenin's, Norton's, Superposition and Maximum Power Transfer theorem; Transient response of dc networks, Color Coding of Carbon resistors, Coding of Capacitors.
- (ii) **Electrical Machines and Power Systems:** Single phase transformers, DC machines: motoring and generating mode of operation, speed control of dc motors; Three-phase induction machines: principle of operation, types, performance, torque-speed characteristics. Servo Motors, Stepper Motors.
- (iii) **Control Systems:** Mathematical modeling and representation of systems, Feedback principle, transfer function, Block diagrams and Signal flow graphs, Transient and Steady-state analysis of linear time invariant systems, Stability analysis using Routh Hurwitz criteria.
- (iv) **Measurement and Instrumentation:** Measurement of voltage, current, power, energy and power factor; Instrument transformers, Digital voltmeters and multimeters, Phase, Time and Frequency measurement; Oscilloscopes; Relays, Switches, Types of Switches, Connectors, types of Connectors, Oscillators, Optoelectronic devices, Power Supply IC's.
- (v) **Digital Circuits:** Number representations and conversions: binary, octal, hexadecimal. Combinatorial circuits: Boolean algebra, minimization of functions using Boolean identities and Karnaugh map. Sequential circuits: latches and flip-flops, counters, shift-registers. Data converters: sample and hold circuits, ADCs and DACs. Embedded Systems: Microprocessor and microcontroller applications, memory and input-output interfacing; basics of data acquisition systems. Open-source electronic prototyping platforms like Arduino, their PIN layouts and programming.



- (vi) **Analog Circuits:** Diode circuits: clipping, clamping and rectifiers. BJT and MOSFET amplifiers: biasing, small signal analysis, frequency response. Op-amp circuits: Amplifiers, summers, differentiators, integrators, active filters, Schmitt triggers and oscillators. Regulated Power Supply Design.
- (vii) **CAD and Rapid prototyping:** CAD designing, CAD Designing software, Features of CAD software, File types in CAD, Menu features in CAD software, Autodesk Inventor Software, File Types in Inventor, 2D Sketching, 3D Sketching, 3D Printing, Additive Printing, Types of Additive Printing, Subtractive Printing, Metal Fusion Techniques for 3D Printing, Fused Deposition Modeling (FDM), Types of Materials in FDM, Properties of PLA, Properties of ABS, Properties of PET, Properties of PETG, Properties of Nylon, Slicer Software, File types in Slicer Software, Laser Engraving Techniques, Laser Engravers, Types of Lasers, Printed Circuit Board (PCB) Designing, Types of PCB materials, Multi-Layer PCB's, PCB Component Footprints.
- (viii) **IPR:** Types of IPR like trademark, copyright etc., The Patents Act, 1970 (incorporating all amendments till 23-06-2017): Chapter 1: Preliminary, Chapter 2: Inventions Not Patentable, Chapter 3: Applications for Patents, Chapter 4: Publication and Examination of Applications. The Patents Rules, 2003 (incorporating all amendments till 21-09-2021): Short title and commencement, Definitions, Types of Forms, Form Numbers, Use of Forms, Timelines for different Forms, Types of Applicants, Different Fees based on Type of Applicants, Different Stages of Patent Filing, Prescribed particulars, Appropriate office, Address for service, Leaving and serving documents, Fees, Forms, Filing of documents and copies, etc. The Designs Act 2000: Chapter 1: Preliminary, Chapter 2: Registration of Designs. Design Rules, 2001 (incorporating The Designs (amendment), Rules, 2021): Short title and commencement, Definitions, Types of Forms, Form Numbers, Use of Forms, Timelines for different Forms, Types of Applicants, Different Fees based on Type of Applicants, Prescribed particulars, Appropriate office, Address for service, Leaving and serving documents, Fees, Forms, Filing of documents and copies, etc.

(11) Works Supervisor

(i) Building Construction: Foundations: Types of foundations & their suitability, causes of failure of foundation. Brick Work: Characteristics of a good brick, Types of Bonds in Brick Work, Standard size of Brick and Brick tiles. Concrete: Ingredients of cement concrete, Type of mixes of concrete, Water-cement ratio, Necessary tests on cement concrete. Cement: Types of cement. Coarse Aggregate-size of aggregates and their Grading, Fine Aggregate (Sand) and their Grading. Cement plaster: Common mixes of plaster used with proportion, tools used. Wood Work: Common type of wood used for frames for doors and windows, Types of shutter — Panelled, Glazed, flush doors, Methods of fixing doors & Windows. Types of Roofing. Types of finishing: Painting, polishing, white washing, interior and exterior finishing. Flooring: Type and suggested flooring for different types of buildings



such as Marble, Granite, vitrified tile. cement concrete, brick flooring. Sanitary & Plumbing: Common items/activities executed in Sanitary and Plumbing Works. Sewerage treatment plant (SIT), Feasibility of Soakage pit and its construction, Manholes, inspection chambers. Water Supply: Types of pipes used for water supply in buildings, fittings and connection.

(ii) Civil Engineering Drawing and Interpretation: civil engineering drawings, including plans, sections, and elevations, symbols and conventions used in civil engineering drawings, Dimensioning and scaling techniques.

(iii) Surveying in Civil Engineering: Leveling: Definition of terms such as level surface. level line, horizontal line, datum surface. Terms used in leveling: foresight, intermediate sight, back sight. change point, height of collimation. Contouring: Definition of Contour, characteristics of contour & use of contour map.

(iv) Construction Techniques and Practices: various construction methods and techniques, building codes and regulations, safety practices and procedures in construction sites, civil construction tools, equipment, and machinery

(v) Measurement and Estimation: measurements of quantities for construction projects, estimation techniques and cost calculation methods, units and conversions relevant to construction. Calculating quantities of earth work in buildings and roadwork, cement concrete in foundation. Brick work. Slab. Woodwork in frames of door & windows. Reinforcement in columns, beams and slab.

(vi) Experience and Practical Knowledge: Familiarity with project management principles and practices, Basic knowledge of current affairs related to the construction industry, Awareness of safety regulations and environmental considerations in construction projects

(12) WORKSHOP MECHANIC

(i) Foundry Shop: Understanding of basic steps in casting operation, terminology, process flow; mold making process and tools; sand testing equipment; working and operation of equipment used in casting shop; Safety precautions for foundry.

(ii) Machine Shop: Standard machine tools and their operations; Cutting tools for various machines, cutting tool materials, tool geometry; Cutting fluids, classification; Grinding machine types and operations, types of grinding wheels, specifications; Safety precautions for machine shop

(iii) Assembly Shop: Processes in fitting shop; Equipment; Layout procedure; File work; Thread cutting tools; Operation and types of chisels, scrapers, dividers, calipers.



(iv) Welding Shop: Welding processes and equipment; operations of welding machines; selection of consumables such as electrode, flux, nozzles, gas etc.; types of welds, joints and positions; Safety precautions for welding

(v) Smithy, Forging and Sheet Metal Work: Knowledge of equipment and tools for smithy, forging and sheet metal work; Press tools, molds, Operations related to Smithy, forging and sheet metal work; Knowledge of control parameters to achieve defect-free parts; Safety precautions

(vi) Metrology: Understanding related to operation and working principles of measuring equipment and tools used for inspection on shop floor; Knowledge of standards of measurement; Measurement of Surface roughness, Knowledge of fits and tolerances (geometric dimensioning and tolerances).

(vii) Advanced Manufacturing: Operation and working principles of advanced manufacturing and inspection equipment such as CNC Machines, 3-D Printers; Basic understanding of Computational tools for component fabrication.

(viii) Process Engineering: Process sheet, Machining time calculations, Jigs and Fixtures.

(ix) Engineering Materials: Structure and properties of engineering materials, phase diagrams, heat treatment, stress-strain diagrams for engineering materials.

(x) General Skills: Understanding of engineering drawing, Planning & performing simple repair, overhauling of different machines and checking functionality, skills to execute pipe joints, dismantling and assembling valves and fittings. Testing for leakages, planning and performing basic day to day preventive maintenance, safety aspects, Knowledge of GFR with prior experience of framing technical specifications and preparation of tender documents.

(13) Legal Assistant

(i) Constitutional Law.

- Salient features of the Indian Constitution, Preamble
- Fundamental Rights, Directive Principles of the State Policy and Fundamental Duties.
- Emergency Provisions
- Distribution of legislative powers between Centre and State.
- Amendment of the Constitution
- Supreme Court and High Court: Appointment of Judges, Powers and Jurisdiction of the Courts.
- writ Jurisdiction-High Court and Supreme Court.
- Lists-Union, Concurrent and State.

(ii) Law of Contract.



- General Principles of Contract: Offer, Acceptance, Consideration and Capacity to contract
- Consent and factors affecting free consent
- Modes of discharge of contract
- Quasi-Contract
- Remedies for breach of Contract
- Specific Contracts: Indemnity, Guarantee, Bailment, Pledge and Agency.

(iii) Law of Torts

- Nature of tort
- Absolute and strict liability
- Vicarious liability
- General Defenses
- Negligence
- Defamation
- Nuisance
- Trespass

(iv) Administrative Law.

- Administrative actions: meaning, need and classification
- Principles of Natural Justice
- Rule of Law
- Separation of Powers
- Administrative discretion.
- Act of State
- Contractual Liability
- Public accountability
- Delegation of legislative powers
- Statutory immunity
 - Jammu and Kashmir Civil Service Rules, 1956.
 - The Jammu and Kashmir reorganization act, 2019.
 - J&K Govt. Employees Conduct Rules, 1971.
 - J&K Civil Services (Classification, Control and Appeal) Rules 1956.
 - UGC Act,1956.



(14) Junior Assistant

- (i) NEP 2020 and Higher Education Scenario.
- (ii) Higher Education Regulatory Bodies and their functions (UGC/AICTE/INC/CoA).
- (iii) J&K Civil Service Regulations (introduction).
- (iv) Right to Information Act. (Basic concepts).
- (v) Drafting / Noting / office Communications.
- (vi) Basic concept of University Management System / ERP.
- (vii) Office Procedures & Office Management.
- (viii) File Management System.
- (ix) Maintenance of Records.
- (x) Basic use of Information Technology in Offices / E-Office.