



SARDAR PATEL UNIVERSITY

VALLABH VIDYANAGAR -388 120 GUJARAT

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NAAC Accredited with Grade 'A' (10-01-2023 to 09-01-2028)

No. B/S/2/6381(1)

Date:29-10-2025

EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date: 18-10-2025

Adv. No. EST-20-2025 to EST-29-2025

જાગ્યાની તાંત્રિક શૈક્ષણિક લાયકાત સંબંધિત અભ્યાસક્રમ ને લગતા

એમ.સી.ક્યુ.(M.C.Q) પ્રશ્નો માટેના અભ્યાસક્રમો

જાહેરાત નંબર. ઈએસટી-૨૦-૨૦૨૫ થી ઈએસટી-૨૯-૨૦૨૫ના પરીક્ષાના માળખાના અનુક્રમ નંબર ૫. માટે એમ.સી.ક્યુ.(M.C.Q) પ્રશ્નો માટેના અભ્યાસક્રમો Annexures 01 to 10 થી સામેલ છે.

Adv. No.	Name of Posts	Annexures
EST-20-2025	Senior Technical Assistant (Electronics)	Annexure: 01
EST-21-2025	Statistical Assistant (General Administration)	Annexure: 02
EST-22-2025	Technical Assistant (Physics)	Annexure: 03
EST-23-2025	Technical Assistant (Biosciences)	Annexure: 04
EST-24-2025	Compounder (University Health Centre)	Annexure: 05
EST-25-2025	Machine Operator (G. H. Patel Computer Centre)	Annexure: 06
EST-26-2025	Punch Operator (G. H. Patel Computer Centre)	Annexure: 07
EST-27-2025	Mason (University Estate Section)	Annexure: 08
EST-28-2025	Guest House Attendant (University Estate Section)	Annexure: 09
EST-29-2025	Offset Machine Operator (University Press)	Annexure: 10

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Registrar

Sardar Patel University
Vallabh Vidyanagar

EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-20-2025**Post Name : Senior Technical Assistant (Electronics)**

Unit	
1	Basic Electronics & Devices - Semiconductor physics: Diodes, Transistors, FETs - Rectifiers, Voltage regulators - Operational Amplifiers and applications - Digital electronics: Logic gates, flip-flops, counters - Number systems and Boolean algebra
2	Electronic Circuits & Communication Systems - Analog circuits: Amplifiers, oscillators, filters - Digital circuits: Multiplexers, encoders, decoders - Modulation techniques: Analog and Digital, ASK, FSK, PSK - Communication systems: Radio, satellite, optical fiber basics - Antennas and wave propagation
3	Microprocessors & Embedded Systems - Architecture of 8051, 8085, and 8086 microprocessors - Basics of embedded systems and microcontrollers - Computer architecture: CPU, memory, buses, I/O devices - Storage devices: HDD, SSD, flash memory - Networking basics: OSI & TCP/IP models, - Network devices: routers, switches, hubs, modems, LAN/WAN, IP addressing
4	Instrumentation & Measurements - Electronic instruments: CRO, Multimeter, LCR meter, Q Meter, Clamp Meter - Measurement techniques: Voltage, current, resistance, frequency - Transducers and sensors – Physical, Chemical, Bio - Signal conditioning and data acquisition - Calibration and error analysis
5	Repair, Maintenance & Technical Communication - Identification and testing of passive/active components - Soldering/desoldering (through-hole & SMD) - PCB design, fault diagnosis, and rework - Power supply testing and repair - Safety protocols and ESD handling - Technical report writing and documentation



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EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-21-2025
Post Name: Statistical Assistant

Unit	Content
1	History of Statistics, Data Types, Qualitative and Quantitative, Primary and Secondary, Time Series, Cross Sectional, Pooled, Methods of Data Collections, Classification of Data, Sturges' Rule, Frequency Distribution, Cumulative Frequency Distribution; Presentation of Data: Pie Chart, Bar Chart, Cluster Bar Chart, Box Plot, Histogram and Normal Probability Plot, Scatter Plot
2	Measures of Central Tendency, Harmonic Mean, Geometric Mean, Quartiles, Percentiles, Advantages and Disadvantages. Measures of Dispersions: Absolute and Relative Measures: Advantages and Disadvantages, Range, Inter-Quartile Range, Quartile Deviation, Variance, Standard Deviation, Average Deviation from Mean and Median. Measure of Consistency or Reliability- Coefficient of Variation, Coefficient of Mean Deviation from Median, Coefficient of Mean Deviation from Mode - Advantages and Disadvantages
3	Definition and Concept of Probability, Properties of Event Probability, Conditional Probability, Probability Distribution and their Properties: Bernoulli Binomial, Poisson, Geometric, Normal Exponential, Gamma Distribution their Mean, Variance, Moment Generating Functions. Correlation concept, kinds of Correlation, Coefficient (numerical measure) of Correlation such as Pearson Correlation and Spearman's Correlation. Regression analysis for Cause-and-Effect Relationship. Regression Equations and their Properties.
4	Null Hypothesis, Alternative Hypothesis, Probability of Type I - Error and Type - II Error, Power of Test, Acceptance and Rejection Region, p-value, Test of Proportions: One Sample, Two Samples; Test of Association Between Two Attributes; Parametric Tests: Small and Large Samples: One Sample, Two Samples and k-Samples, Paired Samples; Nonparametric Tests; Sign Test, Signed Rank Test, Wilcoxon Signed Rank Test for Paired Samples, Mann-Whitney U test for Two Independent Samples, Kruskal-Wallis Test for k-Samples; Test of Population Variance: One Sample, Two Samples and k-Samples
5	Elements of Operation Research: Basic Solution, Basic Feasible Solution, Optimal Solution, Maxima and Minima of function, Convex and Concave Set, Canonical and Standard form of Linear Programming Problem, Graphical Methods. Sampling Theory: Sample, population, sampling frame, Simple random sampling, systematic random sampling, stratified random sampling. Introduction to Statistical Software MS Excel, R





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Post: Technical Assistant (Physics)
Syllabus for Written Exam

EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-22-2025

Unit	Topics	Weightage (%)
1	Precision, accuracy and errors in experimental measurements, Errors, Basics of Computer architecture, hardware components, motherboards, processors, memory, I/O devices, networking, internet protocols, operating systems, Basics of programming languages	10
2	Semiconductor Devices Basic structures, principles of operations, biasing fundamentals, configurations, electrical characteristics and basic applications of: P-N junction diodes, voltage regulator, rectifiers, clippers, clampers, Light-emitting diode, photodiodes, phototransistor, solar cells, Uni-junction Transistor (UJT), Silicon Controlled Rectifier, Bi-Junction Transistors (BJT), Transistor biasing and stability, FET, MOSFET. Amplifiers and Oscillators: CE, CB, CC amplifiers, Power Amplifiers – Class A, Class B, Push-Pull and Class C Amplifiers, Feedback amplifiers, Resonant circuit oscillators, Hartely, Colpitt and Phase-shift oscillators,	20
3	Integrated Circuits and Digital Electronics Operational Amplifier (OPAM), Characteristics and Parameters, Number Systems and Conversions, Boolean Algebra, Karnaugh Mapping, Logic Gates, Logic families – DTL, TTL, CMOS Combinational logic circuits: Half adder and Full adder, Subtractors, Comparators, Decoders, Encoders, Multiplexers, De-multiplexers Sequential logic circuits: IC 555 working principles, Astable multivibrator and monostable multivibrator, Flip-Flops, bistable multivibrator, Registers and Counters. Analogue-to-Digital, Digital-to-Analogue Converters and Memories: Weighted Resistor D/A Converter, R-2R ladder D/A Converter, D/A Converter Performance, Flash A/D Converter, Counter-Type A/D Converter, Successive-Approximation A/D Converter, Read-Only Memory (ROM), Random Access Memory (RAM), Memory Addressing, Memory Read/Write, Microprocessor 8085 – Pin configuration, operational code, programming, Arduino Board and programming	25
4	Optics, Optical Instruments, Acoustics and Fibre Optics Basic concepts of interference, diffraction, polarisation, resolving power of optical instruments, Optical components, instruments and light sources: lenses, mirrors, biprism, gratings, beam splitters, filters, spectrometer, microscope, telescope, lasers (Solid state lasers, Semiconductor lasers, He-Ne Laser, CO ₂ laser), Interferometers, Ultrasonic waves, Production and detection of ultrasonic waves, Basics of Fiber optics and applications – working principle, parameters, types of optical fibers, losses	20

5	Electricity, Magnetism, Electrical Circuit Analysis Electric field, Gauss law and its applications, Capacitors and Dielectrics, Magnetic field, Bio-Savart law, Ampere's Circuital law and its applications, Faraday's law and electromagnetic induction, self-inductance, mutual inductance, eddy currents, Magnetic properties of materials, diamagnetism, paramagnetism, ferromagnetism, magnetic hysteresis AC circuits and analysis: R, L, C circuits, phasor diagrams, Average and RMS voltage, current, power in the circuits, Series resonance and Q factor, transformers, Network Analysis: Norton and Thevenin theorems Thermoelectricity, Seebeck effect, Peltier effect, thermocouple, thermistor,	25
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EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-23-2025

Technical Assistant (Biosciences)
Syllabus

Unit I : Basic Biochemistry:

Structure and properties of Proteins, carbohydrates, lipids, vitamins.
Enzymes and metabolic pathways. Bioenergetics, Nutrition, digestion, circulation, excretion, respiration and photosynthesis

Unit II: Cell and Molecular Biology

Structure of prokaryotic and eukaryotic cells, cell organelles, cell membrane and transport, cell division and cell cycle, cell death
Structure of DNA, RNA. Central dogma, replication, transcription and translation, Genetic code, mutations, R DNA technology

Unit III: Bioinstrumentation:

Principle and working of basic laboratory instruments
Colorimetry, spectroscopy, manometry, microscopy, chromatography, electrophoresis
PCR, blotting, sequencing
Biosensors and its applications

Unit IV: Environmental Biology

Basics of ecosystems, biogeochemical cycles, biodiversity
Environmental issues: pollution, climate change, deforestation
Human impact on environment, conservation of environment

Unit V: Laboratory skills:

Calibration, validation, preparation of solutions, buffers, reagents, indicators. Molarity, normality. Qualitative and quantitative analysis, titrations, Gravimetric analysis
Biochemical calculations
Computational skills: word, excel, powerpoint etc



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EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-24-2025

Name of Post: Compounder

Syllabus for Descriptive Examination

Unit	Description
1	Human Anatomy and Physiology Anatomy, normal physiology and vital physiological parameters of various organ systems of human body: Cell, Tissue, Osseous System, Haemopoietic System, Lymphatic System, Cardiovascular System, Respiratory System, Digestive System, Skeletal Muscles, Nervous System, Sensory Organs, Urinary System, Endocrine System, Reproductive System
2	Pharmaceutical formulations Basics of Tablets, Capsules, Liquid Orals, Topical preparations, Powders and Granules, Sterile formulations, Immunological & Biological products
3	Pharmacology and Pharmacotherapeutics - General Pharmacology & Basic Medical Information about Drugs - Pharmacotherapeutics and Drugs acting on Peripheral Nervous System, Central Nervous System, Cardiovascular System, Blood, Sensory Organs, Respiratory System, Kidney, Hormones, Autocoids, Chemotherapeutics
4	Public Health and Hygiene - Role and Responsibility of Pharmacists - Rational Use of Drugs - National Health Programs Record Keeping and Drug Store Management - Preparation of Drug Lists - Procedures for Purchase of Medicines - Inventory Control and Management - Disposal of Medicines - Application of computer in record keeping
5	First Aid, Dispensing, Compounding and Prescription Reading - First Aids for various emergency conditions - Prescription and Prescription Handling - Patient Counselling, Medication Adherence and Medication Errors - OTC Medications, Drug-Drug Interactions - Packaging and Labelling of Prescribed Medications - Health Screening Tests, Diagnostic Laboratory Tests - Poisoning and Antidotes



EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-25-2025

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Post Name : Machine Operator

Unit	
1	Computer Basics: Introduction to computers - characteristics, components and generations, types of computers, input/output devices, memory, various storage devices, understanding hardware components, software, and peripherals, representation of data
2	Basics of Operating Systems : Basics of MS Windows/Linux, The User Interface, file systems, file and directory management, installing/uninstalling software, control panel, task manager.
3	Word processing : Basics of MS Word, elements of word processing, text creation, manipulation and formatting, usage of tables, shortcuts, mail merge, advanced features. Basics of Powerpoint presentations: Basics of MS Powerpoint, creation of a presentation, preparation of slides, slide transition, automating a slide show
4	Spreadsheets : Basics of MS Excel, spreadsheet elements, manipulation of cells, editing worksheet data, sorting and filtering data, inserting and deleting rows / columns, working with formulas, functions, charts, protecting a worksheet.
5	Basics of Internet and Networking : Services on the Internet, WWW, usage of web browsers and search engines, Internet security, email basics, networking basics, recent trends.

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Post Name : Punch Operator

EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-26-2025

Unit	
1	Computer Basics: Introduction to computers - characteristics, components and generations, types of computers, input/output devices, memory, various storage devices, understanding hardware components, software, and peripherals, representation of data
2	Basics of Operating Systems : Basics of MS Windows/Linux, The User Interface, file systems, file and directory management, installing/uninstalling software, control panel, task manager.
3	Word processing : Basics of MS Word, elements of word processing, text creation, manipulation and formatting, usage of tables, shortcuts, mail merge, advanced features. Basics of Powerpoint presentations: Basics of MS Powerpoint, creation of a presentation, preparation of slides, slide transition, automating a slide show
4	Spreadsheets : Basics of MS Excel, spreadsheet elements, manipulation of cells, editing worksheet data, sorting and filtering data, inserting and deleting rows / columns, working with formulas, functions, charts, protecting a worksheet.
5	Basics of Internet and Networking : Services on the Internet, WWW, usage of web browsers and search engines, Internet security, email basics, networking basics, recent trends.



Format

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Post Name : ITI CMason

Unit	
1	Basics of Masonry and Engineering Drawing Introduction to the trade; identification and use of masonry tools and equipment; workplace safety and health; basics of engineering drawing, measurement and simple workshop calculations.
2	Brick and Block Work with Mortar Types and properties of bricks and blocks; preparation of mortar mixes; setting out and laying of walls in different bonds; construction of arches and lintels.
3	Finishing Works, Flooring and Roofs Methods of plastering and surface finishing; laying of different types of flooring and skirting; construction of stairs; roofing practices including waterproofing.
4	Plumbing, Drainage and Openings Layout of drainage systems; fixing of doors and windows; anti-termite treatment; internal and external finishing works.
5	Safety, Employability and On-Site Practice Health and site safety measures; communication and teamwork skills; employability skills; on-site project work and final trade assessment.



EMPLOYMENT NOTIFICATION No. B/S/2/6381 Date : 18/10/2025 Adv. No. EST-28-2025

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Post Name: Guest House Attendant

Unit	Content
1	Introduction of Hotel Industry 1.1 Classification of Hotels 1.2 Front Office department 1.3 Layout of Front Office department 1.4 Organization of Front Office 1.5 Duties and responsibilities of Front Office Personal
2	Types of Rooms & Reservation 2.1 Different types of rooms 2.2 Reservation 2.3 Registration 2.4 VIP arrivals 2.5 Group arrivals
3	Housekeeping 3.1 Introduction to Housekeeping department. 3.2 Layout of the Housekeeping department 3.3 Organization of the housekeeping department 3.4 Qualities of the Housekeeping staff 3.5 Cleaning agents and equipments
4	Cleaning 4.1 How to enter a guestroom 4.2 Room cleaning & bathroom cleaning 4.3 Bed making procedures 4.4 Placing guest amenities 4.5 Public area cleaning
5	Food & Beverage Service 5.1 Functions and scope of F&B service in hospitality 5.2 Organizational structure of F&B department 5.3 Job roles: F&B Manager, Steward, Sommelier, Banquet Manager 5.4 Types of service outlets: fine dining, cafes, bars, banquets, room service 5.5 Restaurant equipments: crockery, cutlery, glassware, silverware



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Annexure: 10

Post Name : Offset Machine Operator

Unit	
1	Basic Printing Technology : Fundamentals of printing processes, history, types of offset printing machines, Printing materials : paper, inks, plates, blankets, etc., image carriers (plates) and plate making process, knowledge of sizes of papers and GSM.
2	Offset Machine Operation : Components and working of offset printing machines, plate mounting and blanket setting, color matching and control, setting up and running a job, cleaning and maintenance of printing equipment
3	Quality Control & Troubleshooting : Common printing defects (e.g. ghosting, doubling, etc.), causes and remedies of printing defects, inspection and testing of printed materials
4	Usage of computers for offset machine printing : knowledge of digital printing, popular software packages used for the process of printing using computers
5	Safety, Maintenance and environmental Awareness : Safe handling of chemicals and inks, fire safety, workplace ergonomics, routine machine maintenance and cleaning, waste management and environmental regulations

