



GURUGRAM UNIVERSITY, GURUGRAM

(A State Govt. University established under Haryana Act 17 of 2017)

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No. GUG/Estt./2023/1465

Dated: 30-10-23

NOTICE

Subject : Broad Syllabus / Pattern of written test for the posts advertised vide Advt. no. ENT- 08/2023.

Reference: Advertisement No. ENT- 08/2023 (Non-Teaching Posts).

The Broad Syllabus / Pattern of written test for the posts advertised vide Advt. no. ENT-08/2023 are annexed at annexure- A. These tests will be held in English only.

This is for information of all applicants.


Deputy Registrar (Estt)
For Registrar

- *Incharge, UCDAC (for uploading on the university website)
- * PA to VC/ Registrar (for information)

**BROAD SYLLABUS FOR THE POST OF
SUB DIVISIONAL OFFICER (SDO)- ELECTRICAL.**

Written Test : 100 MCQs

Duration : 02 Hrs

No Negative Marking

Section 1: 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 and ac networks, sinusoidal steady-state analysis, resonance, two port networks, balanced three phase circuits, star-delta transformation, complex power and powerfactor in ac circuits.

Section 2: Electromagnetic Fields

Coulomb's Law, Electric Field Intensity, Electric Flux Density, Gauss's Law, Divergence, Electric field and potential due to point, line, plane and spherical charge distributions, Effect of dielectric medium, Capacitance of simple configurations, Biot-Savart's law, Ampere's law, Curl, Faraday's law, Lorentz force, Inductance, Magnetomotive force, Reluctance, Magnetic circuits, Self and Mutual inductance of simple configurations.

Section 3: Signals and Systems

Representation of continuous and discrete time signals, shifting and scaling properties, linear time invariant and causal systems, Fourier series representation of continuous and discrete time periodic signals, sampling theorem, Applications of Fourier Transform for continuous and discrete time signals, Laplace Transform and Z transform. R.M.S. value, average value calculation for any general periodic waveform.

Section 4: Electrical Machines

Single phase transformer: equivalent circuit, phasor diagram, open circuit and short circuit tests, regulation and efficiency; Three-phase transformers: connections, vector groups, parallel operation; Auto-transformer, Electromechanical energy conversion principles; DC machines: separately excited, series and shunt, motoring and generating mode of operation and their characteristics, speed control of dc motors; Three-phase induction machines: principle of operation, types, performance, torquespeed characteristics, no-load and blocked-rotor tests, equivalent circuit, starting and speed control; Operating principle of single-phase induction motors; Synchronous machines: cylindrical and salient pole machines, performance and characteristics, regulation and parallel operation of generators, starting of synchronous motors; Types of losses and efficiency calculations of electric machines.

Section 5: Power Systems

Basic concepts of electrical power generation, ac and dc transmission concepts, Models and performance of transmission lines and cables, Economic Load Dispatch (with and without considering transmission losses), Series and shunt compensation, Electric field distribution



and insulators, Distribution systems, Per-unit quantities, Bus admittance matrix, Gauss-Seidel and Newton-Raphson load flow methods, Voltage and Frequency control, Power factor correction, Symmetrical components, Symmetrical and unsymmetrical fault analysis, Principles of over-current, differential, directional and distance protection; Circuit breakers, System stability concepts, Equal area criterion.

Section 6: Control Systems

Mathematical modelling 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 and Nyquist criteria, Bode plots, Root loci, Lag, Lead and Lead-Lag compensators; P, PI and PID controllers; State space model, Solution of state equations of LTI systems

Section 7: Electrical and Electronic Measurements

Bridges and Potentiometers, Measurement of voltage, current, power, energy and power factor; Instrument transformers, Digital voltmeters and multi-meters, Phase, Time and Frequency measurement; Oscilloscopes, Error analysis.

Section 8: Analog and Digital Electronics

Simple diode circuits: clipping, clamping, rectifiers; Amplifiers: biasing, equivalent circuit and frequency response; oscillators and feedback amplifiers; operational amplifiers: characteristics and applications; single stage active filters, Active Filters: Sallen Key, Butterworth, VCOs and timers, combinatorial and sequential logic circuits, multiplexers, demultiplexers, Schmitt triggers, sample and hold circuits, A/D and D/A converters.

Section 9: Power Electronics

Static V-I characteristics and firing/gating circuits for Thyristor, MOSFET, IGBT; DC to DC conversion: Buck, Boost and Buck-Boost Converters; Single and three-phase configuration of uncontrolled rectifiers; Voltage and Current commutated Thyristor based converters; Bidirectional ac to dc voltage source converters; Magnitude and Phase of line current harmonics for uncontrolled and thyristor based converters; Power factor and Distortion Factor of ac to dc converters; Single-phase and three phase voltage and current source inverters, sinusoidal pulse width modulation.



BROAD SYLLABUS FOR THE POST OF

LAW OFFICER

Written Test : 100 MCQs

Duration : 02 Hrs

No Negative Marking

Section- A (70 Questions)

CPC, Indian contract Act, Indian Evidence Act, IPC, Cr.PC, Sales and goods act Constitutional Law, Administrative Law, Taxation Law, Corporate Law, Business Law, International Law, Labour Law, Real Estate Law, Intellectual property /Patent Law, Apprenticeship Act-1961, Prevention of Corruption Act, CVC Act, Civil Procedure code, Law of Evidence, Law of Limitations, Law of registration, The Indian Penal Code, The Indian Evidence Act.

Indian Universities and their Administration

"Types of Universities, Role of Government in Universities, Administrative Hierarchy, Administrative Branches and their functions, Functions of Statutory Officers, University Accounting and Audit System" The candidates are expected to have the knowledge of following:

- The Universities Act, Statutes and Ordinances, • Recruitment Rules, • Haryana Civil Services Rule-2016, • General Financial Rules, • The Right to Information Act, 2005.

Section-B (30 Questions)

General English of Graduation Level Verb, Subject-Verb Agreement, Error Correction, Tenses, Sentence Rearrangement, Adverb, Comprehension, Articles, Grammar, Fill in the Blanks, Unseen Passages, Synonyms, Vocabulary, Idioms & Phrases, Antonyms etc,

General Aptitude

Data Interpretation, Number Series, Coding-Decoding, Non-Verbal Series, Number Ranking, Alphabet Series, Directions, Analogy, Arithmetical Reasoning, Blood Relations, Decision Making, Mirror Images, Clocks & Calendars, Cubes and Dice, Embedded Figures etc.

BROAD SYLLABUS FOR THE POST OF

LEGAL ASSISTANT

Written Test : 100 MCQs

Duration : 02 Hrs

No Negative Marking

Section- A (70 Questions)

CPC, Indian contract Act, Indian Evidence Act, IPC, Cr.PC, Sales and goods act Constitutional Law, Administrative Law, Taxation Law, Corporate Law, Business Law, International Law, Labour Law, Real Estate Law, Intellectual property /Patent Law, Apprenticeship Act-1961, Prevention of Corruption Act, CVC Act, Civil Procedure code, Law of Evidence, Law of Limitations, Law of registration, The Indian Penal Code, The Indian Evidence Act.

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General Aptitude

Data Interpretation, Number Series, Coding-Decoding, Non-Verbal Series, Number Ranking, Alphabet Series, Directions, Analogy, Arithmetical Reasoning, Blood Relations, Decision Making, Mirror Images, Clocks & Calendars, Cubes and Dice, Embedded Figures etc.



**BROAD SYLLABUS/PATTERN OF WRITTEN TEST FOR THE POST OF
LAB ASSISTANT**

Written test: 95 MCQs Duration: 2 hrs No negative marking

Syllabus:

Part I: Aptitude (**35** Multiple Choice Questions of 1mark each)

- Unit A General Knowledge – Current events, sports, history, geography, basic economics, general politics, Indian Constitution, Science environment etc
- Unit B General English, covering Grammar- Prepositions, adverbs, conjunction, direct/indirect speech, singular & plural, tenses, antonyms/synonyms etc
(Syllabus up to 10th standard as prescribed by NCERT)
- Unit C Questions on Reasoning and analytical Ability

Part II: Subject knowledge (**60** Multiple Choice Questions of 1mark each) –

- Unit A General Science (NCERT Syllabus upto 10+2 standard) & Mathematics (NCERT syllabus upto 10th Standard).
- Unit B Lab Procedures & Good Practices, Safety Precautions, Handling & Maintenance of equipment's, Preparation of SOPs for equipment's, Maintenance of Lab records, Understanding of flammable & highly flammable solutions and handling procedures, Disposable of different waste etc.

This examination will be held in English medium only.



BROAD SYLLABUS/PATTERN OF WRITTEN TEST FOR THE POST OF

LAB ATTENDANTS

Written test: 95 MCQs Duration: 2 hrs No negative marking

Syllabus:

Part I: Aptitude (**35** Multiple Choice Questions of 1mark each)

- Unit A General Knowledge – Current events, sports, history, geography, basic economics, general politics, Indian Constitution, Science environment etc
- Unit B General English, covering Grammar- Prepositions, adverbs, conjunction, direct/indirect speech, singular & plural, tenses, antonyms/synonyms etc
(Syllabus up to 10th standard as prescribed by NCERT)
- Unit C Questions on Reasoning and analytical Ability

Part II: Subject knowledge (**60** Multiple Choice Questions of 1mark each) –

- Unit A General Science (NCERT Syllabus upto 10+2 standard) & Mathematics (NCERT syllabus upto 10th Standard).
- Unit B Lab Procedures & Good Practices, Safety Precautions, Handling & Maintenance of equipment's, Preparation of SOPs for equipment's, Maintenance of Lab records, Understanding of flammable & highly flammable solutions and handling procedures, Disposable of different waste etc.

This examination will be held in English medium only.

BROAD SYLLABUS/PATTERN OF WRITTEN TEST FOR THE POST OF

LIBRARY ATTENDANT

Written test: 95 MCQs Duration: 2 hrs No negative marking

- 75% weight-age for General Awareness, Reasoning, Maths, Science, Computer, English, Hindi (upto 10th standard of Haryana Board of School Education- HBSE).
- 25% weight-age for History, Current Affairs, Literature, Geography, Civics, Environment, Culture etc. of Haryana (up to 10th standard of Haryana board of School Education – HBSE)

88