



കേരള ദേവസ്വം റിക്രൂട്ട്മെന്റ് ബോർഡ്

പരീക്ഷാരീതിയും സിലബസ്സും

Mode of examination and Syllabus

തസ്തികയുടെ പേര് Name of Post	-	അസിസ്റ്റന്റ് എഞ്ചിനീയർ (ഇലക്ട്രിക്കൽ) Assistant Engineer (Electrical)
കാറ്റഗറി നമ്പർ Category Number	-	68/2025 68/2025
ദേവസ്വം Devaswom	-	കൊച്ചിൻ ദേവസ്വം ബോർഡ് Cochin Devaswom Board
വിദ്യാഭ്യാസ യോഗ്യത Educational Qualification	-	ഇലക്ട്രിക്കൽ എഞ്ചിനീയറിംഗിലുള്ള ബിടെക്/ബി.ഇ അല്ലെങ്കിൽ തത്തുല്യം B.Tech/B.E in Electrical Engineering or its equivalent
പരീക്ഷാരീതി Mode of Examination	-	നിശ്ചിത വിദ്യാഭ്യാസ യോഗ്യതയെ അടിസ്ഥാനമാക്കി ഒബ്ജക്ടീവ് മാതൃകയിലുള്ള പരീക്ഷ (ഒ.എം.ആർ മൂല്യനിർണ്ണയം) Objective Type Test (OMR valuation) based on the qualifications prescribed for the post.
ചോദ്യഭാഷ Medium of Questions	-	ഇംഗ്ലീഷ് English
ആകെ ചോദ്യങ്ങൾ (Total Questions)	-	100
ആകെ മാർക്ക് (Total Marks)	-	100
പരീക്ഷാസമയം Duration of Examination	-	1 മണിക്കൂർ 15 മിനിറ്റ് One hour fifteen minutes

സിലബസ്സ് - Syllabus

- Part I - നിശ്ചിത വിദ്യാഭ്യാസ യോഗ്യതയെ അടിസ്ഥാനമാക്കിയുള്ള വിഷയങ്ങൾ
Subjects based on the prescribed educational qualification

പ്രധാനവിഷയങ്ങളെ അടിസ്ഥാനമാക്കിയുള്ള വിശദമായ സിലബസ്സ്

Detailed syllabus based on the main topics

Electric Circuits

Kirchoff's laws - maximum power transfer theorem. Star/delta transformation. Energy stored in a capacitor and inductor. Analysis of coupled circuits – dot polarity convention – sinusoidal steady state analysis of coupled circuits. Generation of alternating voltages and currents – rms value, average value, peak factor, form factor. AC through series R, L, C circuit – series resonance-resonant power – bandwidth. Resonance in parallel circuits.

Magnetic Circuits- Absolute and relative permeability of a medium

Magnetic field strength- magnetic potential. Relation between magnetism and electricity – Series and parallel magnetic circuits with composite materials. Faraday's laws of electromagnetic induction- Lenz's law – statically and dynamically induced emf.

DC Generators

Constructional details, working principle – types of dc generators - emf equation – power stages – condition for maximum efficiency. DC motor – armature control and field control. Single phase transformer – working principle, equivalent circuit, losses in a transformer, condition for maximum efficiency. Three phase transformer – construction- difference between power transformer and distribution transformer. Alternators- constructional details –Synchronous motor – starting methods – synchronous condenser. Three phase induction motor – working principle, constructional details – slip, torque and current equations – torque- speed curve.

Digital Electronics

Number Systems and Codes: Binary, Octal and hexadecimal conversions- ASCII code, Excess -3 code, Gray code. Combinational circuits - Adders - Full adder and half adder. Multiplexers- Demultiplexers. Flip flops – registers – counters. Digital – to - Analogue and Analogue-to-Digital conversion. Microprocessors - Internal architecture of 8085 microprocessor–Functional block diagram Instruction set - Addressing modes - Classification of instructions - Status flags. Machine cycles and T states – Fetch and execute cycles- Timing diagram.

Power Systems

Line parameters -resistance- inductance and capacitance. Insulators –string efficiency - corona. Circuit breakers - rating- SF6 circuit breaker. Relays – types. Per unit quantities- symmetrical

components – symmetrical and unsymmetrical fault. Power system stability - steady state, dynamic and transient stability-power angle curve.

Control Systems

Transfer function of LTI systems - block diagram reduction - Signal flow graph - Mason's gain formula - Type and Order of the systems- Characteristic equation Time domain specifications of transient and steady state responses- Impulse and Step responses of first order and second order systems. Static error coefficients of type 0,1,2 systems. Routh's stability criterion. Frequency domain specifications. Polar plot and Bode plot - concepts of gain margin and phase margin- stability analysis.

Power Electronics

SCR- Structure, Static characteristics. Fully controlled and half controlled bridge rectifier with R, RL and RLE loads. Voltage Source Inverters– 1-phase half-bridge & full bridge inverter with R and RL loads – Pulse width modulation. Single quadrant, Two quadrant and Four quadrant chopper. Operational Amplifiers - fundamental differential amplifier- Modes of operation. Properties of ideal and practical Op-amp - gain, CMRR and slew rate.

Measurements and Instrumentation

Measurement standards – errors - Types of Errors. Classification of instruments, secondary instruments–indicating, integrating and recording. Ammeters and voltmeters – moving coil, moving iron. Measurement of power: Dynamometer type wattmeter –Construction and working - 3- phase power measurement. Measurement of energy - Single phase energy meter – construction and working. Digital Energy meters -Time of Day(TOD) meters. Oscilloscopes-principle of operation of general purpose CRO-basics of vertical and horizontal deflection system.

Signals and Systems

Classification of signals - Elementary signals- Basic operations on continuous time and discrete time signals. Concept of systems - Classification of systems- Properties of systems - Time invariance- Linearity -Causality – Memory - Stability. Sampling process - Impulse train sampling - sampling theorem- Aliasing effect. Zero order and First order hold circuits.

Transducers

General classification- LVDT- angular displacement transducers- hall effect transducers. Batteries – Primary cells– secondary cells- battery ratings- grouping of cells. Wiring – systems of wiring- rules for domestic wiring. Earthing- types of earthing - rules for earthing. Illumination – Laws of illumination. Electric lamps – different types.