IITPKD/R/NF/02/2024/68 **03rd Feb 2026**

Recruitment for the post of Junior Engineer (Electrical) (Post Code: 24202) and Assistant Executive Engineer (Electrical) (Post Code: 24201) notified vide Advt. No.: IITPKD/R/NF/02/2024 dated February 07, 2024.

The selection process, indicative syllabus and date of examination for the post of Junior Engineer (Electrical) and Assistant Executive Engineer (Electrical) advertised vide Advt. No.: IITPKD/R/NF/02/2024 dated February 07, 2024.

Junior Engineer (Electrical) (Post Code: 24202)

Tentative Schedule of Examination: Level 1 - 08:00 AM, 15-Feb-2026
Level II - 01:30 PM, 15-Feb-2026

The selection process shall be as follows:
Syllabus:

Subject		Maximum Marks	Duration
Level I Objective test	**Basic electrical engineering concepts:** Concepts of resistance, inductance, capacitance, and various factors affecting them. Concepts of current, voltage, power, energy and their units. Kirchhoff's law, Network theorems, Concepts of flux, mmf, reluctance, Different kinds of magnetic materials, Magnetic calculations for conductors of different configurations, Electromagnetic induction, self and mutual induction. AC Circuit Fundamentals, Series and parallel AC Circuits consisting of R.L. and C, Resonance, Concepts/circuit analysis of Three phase and PolyPhase systems, 3 phase power. **Measurement and measuring instruments:** Different methods for measurement of power (1 phase and 3 phase, both active and reactive) and energy. Measurement of frequency and phase angle. Ammeter and voltmeter (both moving oil and moving iron type), extension of range wattmeter, Multimeters, Megger, Energy meter AC Bridges, CT, PT and their uses. Earth Fault Detection. **Electrical Machines:** (a) D.C. Machines – Construction, Basic Principles of D.C. motors and generators, their characteristics, speed control and starting of D.C. Motors. Method of braking	75	120 minutes

	motor, Losses and efficiency of D.C. Machines. (b) 1 phase and 3 phase transformers – Construction, Principles of operation, equivalent circuit, voltage regulation, O.C. and S.C. Tests, Losses and efficiency. Effect of voltage, frequency and wave form on losses. Parallel operation of transformers. Auto transformers. (c) 3 phase induction motors, rotating magnetic field, principle of operation, equivalent circuit, torque-speed characteristics, starting and speed control of 3 phase induction motors. Methods of braking, effect of voltage and frequency variation on torque speed characteristics. (d) Fractional Kilowatt Motors and Single-Phase Induction Motors: Characteristics and applications. (e) Synchronous Machines: Generation of 3-phase e.m.f., armature reaction, voltage regulation, parallel operation, synchronizing, control of active and reactive power. Starting and applications of synchronous motors. **Generation, Transmission and Distribution:** Different types of power stations, Load factor, diversity factor, demand factor, cost of generation, inter-connection of power stations. Power factor improvement, various types of tariffs, types of faults, short circuit current for symmetrical fault level calculation, Switchgears – rating of circuit breakers, Principles of arc extinction by oil and air, MCCB, H.R.C. Fuses, Protection against earth leakage / over current, etc. Buchholtz relay, Merz-Price system of protection of generators & transformers, protection of feeders and bus bars. Lightning arresters, various transmission and distribution systems, comparison of conductor materials, efficiency of different systems. Cable – Different types of cables, cable rating and derating factor. **Utilization of Electrical Energy:** Illumination, Electric heating, Electric welding, Electroplating, Electric drives and motors.		
Level II Skill test	Electrical works connected with the campus have an 11 KV distribution system including Preparation of Autocad drawings, Estimate and BoQ.	75	120 minutes

Final selection will be based on the order of merit in the Level I test (50%) and Level II test (50%).

Assistant Executive Engineer (Electrical) (Post Code: 24201)

Tentative Schedule of Examination: Level I - 10:30 AM, 15-Feb-2026
Level II - 04:00 PM, 15-Feb-2026
Level III - 09:00 AM, 16-Feb-2026

The selection process shall be as follows:
Syllabus:

Subject		Maximum Marks	Duration
Level I Written test	**(A) Office Work Procedures and Manuals:** 1. Standards and Quality practices in maintenance and services 2. Basics of Project Management 3. Provisions of CPWD work Manual, General Conditions of Contract, Schedule of Rates, Analysis of Rates, PAR, Specifications for HVAC, DG sets, Fire detection and Alarm systems, Sub stations and Internal electrification. 4. Guidelines and Procedure for procurement and disposal of Government Stores (Goods) 5. Provisions of National Building and relevant IS Codes, General Financial Rules **(B) Electrical Engineering:** 1. Electrical Materials: Electrical Engineering Materials, crystal structures and defects, ceramic materials, insulating materials, magnetic materials -basics, properties and applications; ferrities, ferro-magnetic materials and components. 2. Electric Circuits and Fields: Circuit elements, network graph, KCL, KVL, Node and Mesh analysis, ideal current and voltage sources, Thevenin's, Norton's, Superposition and Maximum Power Transfer theorems, transient response of DC and AC networks, Sinusoidal steady state analysis, basic filter concepts, two-port networks, three phase circuits, Magnetically coupled circuits, Gauss Theorem, electric field and potential due to point, line, plane and spherical charge distributions, Ampere's and Biot-Savart's laws; inductance, dielectrics, capacitance; Maxwell's equations. 3. Electrical and Electronic Measurements:	100 marks	120 minutes

	Principles of measurement, accuracy, precision and standards; Bridges and potentiometers; moving coil, moving iron, dynamometer and induction type instruments, measurement of voltage, current, power, energy and power factor, instrument transformer, digital voltmeters and multi-meters, phase, time and frequency measurement, Q-meters, oscilloscopes, potentiometric recorders, error analysis, Basics of sensors, Transducers, basics of data acquisition systems 4. Basic Electronics Engineering: Basics of Semiconductor diodes and transistors and characteristics, Junction and field effect transistors (BJT, FET and MOSFETS), different types of transistor amplifiers, equivalent circuits and frequency response; oscillators and other circuits, feedback Amplifiers. 5. Electrical Machines: Single phase transformers, three phase transformers -connections, parallel operation, autotransformer, energy conversion principles, DC machines -types, windings, generator characteristics, armature reaction and commutation, starting and speed control of motors, Induction motors -principles, types, performance characteristics, starting and speed control, Synchronous machines -performance, regulation, parallel operation of generators, motor starting, characteristics and applications, servo and stepper motors. 6. Power Systems: Basic power generation concepts, steam, gas and water turbines, transmission line models and performance, cable performance, insulation, corona and radio interference, power factor correction, symmetrical components, fault analysis, principles of protection systems, basics of solid state relays and digital protection; Circuit breakers, Radial and ring-main distribution systems, load flow analysis, voltage control and economic operation, System stability concepts, Swing curves and equal area criterion. HVDC transmission and FACTS concepts, Concepts of power system dynamics, distributed generation, solar and wind power, smart grid concepts, environmental implications, fundamentals of power economics. 7. Power Electronics and Drives:		

	Semiconductor power diodes, transistors, thyristors, triacs, GTOs, MOSFETs and IGBTs -static characteristics and principles of operation, principles of choppers and inverters, basis concepts of adjustable speed dc and ac drives, DC-DC switched mode converters, DC-AC switched mode converters. 8. Substation Design and Practices: Substation Equipment, Substation Layout, Principles of distribution automation, SCADA, ADMS		
Level II Skill test	Electrical works connected with the campus have an 11 KV distribution system including Preparation of Autocad drawings, Estimate and BoQ	75	120 minutes
Level III Presentation & Interview	Candidates are required to make a brief Power-Point Presentation which includes past experience and vision for the Institute. The interview shall be conducted in such a manner that the candidates'suitability for the post is probed among other things, through academic qualifications, relevant experience, extra-curricular activities, general awareness/ knowledge, communication and problem-solving skills and overall personality etc	25	

Final selection will be based on the order of merit in the Level II test (50%) and Level III test (50%).

The details of venue, time and other instructions shall be shared along with the hall ticket that will be issued to the shortlisted candidates over email in due course.

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Registrar