



IITPKD/R/NF/02/2022/30

25th May 2023

The selection process, indicative syllabus and dates of examination for various posts advertised vide Advt. No.: IITPKD/R/NF/03/2022 dated 21 December 2022.

The selection process consists of two levels. Level I will be objective in nature, while Level II involves trade/descriptive tests as applicable.

Syllabus:

Post Code : 2203 Junior Technical Superintendent (Systems) - Level I

30% of the questions will be on Quantitative and Numerical Ability, Analytical Ability, Comprehension and General Awareness and General English.

70% of the questions will be on Basic Computer Science & Engineering inclusive of Programming, Operating Systems, Data and File Structures, System Software, Virtualization and Cloud Computing, Networking and Computer Hardware, System Administration (Linux and Windows), Software Engineering and DBMS at Degree / MCA / M.Sc(CS) levels.

Post Code: 2204 Junior Assistant - Level I

General Knowledge: Indian History, Heritage, Famous Days & Dates. Rivers, Lakes and Seas. Civics. Inventions and Discoveries. Famous Places in India. Famous Books & Authors. Geography. Biology. Environmental Issues. Indian Politics. Current Affairs. Literature. Tourism. General Science. Indian Economy. Indian Parliament. Artists. Countries and Capitals. Sports. Natural Resources, Indian Agriculture, Trade & Commerce, Population, Education, Social Issues, Commerce.

General English: Idioms & Phrases, Para Completion, Active voice & Passive voice, Parts of Speech, One word Substitutes, Passages, Grammar, Synonyms, Direct & Indirect Speech, Error Correction, Vocabulary, Usage of Articles, Sentence Arrangements, Antonyms, Fill in the blanks, Reading Comprehension, Error Detection.

Computer Knowledge: MS Word, Data Transfer, MS Excel, Computer organization, MS PowerPoint, Software Installing, MS Office Suite, Libre Office, the Hardware of Computers, Internet, MS-DOS, emailing, usage of google drive

Current Affairs: National Issues, Indian Economy, Indian Polity, Judiciary, Environment, Science and Technology, States, Social Schemes, Sports News, Reports, Committee and Commission, Awards and Honours, Accident and calamities, First in India, Important Summits & Events etc.

Logical Reasoning: Analogy, Cubes and Dice, Decision Making, Data Interpretation, Blood Relations, Coding- Decoding, Number Series, Statements & Conclusions, Number Ranking, Clocks

& Calendars, Mirror Images, Embedded Figures, Alphabet Series, Syllogism, Directions, Non-Verbal Series, Statements & Arguments, Arithmetical Reasoning.

Mathematical / Aptitude Test: Geometry. Least Common Multiple (LCM) & Highest Common Factor (HCF). Compound Interest. Time & Work. Number System. Probability. Ratios & Proportions. Partnerships. Simplifications. Simple Interest. Discounts. Percentages. Problems on Ages. Problems on squares, cubes. Allegations & Mixtures. Time & Distance. Boats & Streams. Fundamental Operations. Profit & Loss. Averages. Mensuration. Permutations & Combinations.

Post Code: 2205 Junior Technician (Physics) -Level I

General Aptitude: Quantitative and Numerical Ability, Analytical Ability, Comprehension and General Awareness and General English

Syllabus for BSc Physics ([UGC sample curriculum](#) : Core subjects)

Post Code: 2206 Junior Technician (CIF) - Level I

Electricity and Magnetism: Electrostatics: Electric field, Coulomb's law, Gauss' law, Electric potential; Steady Current. DC and AC current, Peak-, average- and rms values of ac quantities; apparent-, active- and reactive powers; Magnetostatics: Magnetic field, Biot Savart's law, Ampere's Law; Electrodynamics: Electromagnetic induction, Faraday's law, Electromagnetic wave; Voltage and current sources: independent, dependent, ideal and practical; V-I relationships of resistor, inductor, and capacitor; transient analysis of RLC circuits with dc excitation; Kirchoff's laws, mesh and nodal analysis, superposition, Thevenin, Norton, maximum power transfer and reciprocity theorems.

Measurements: SI units, systematic and random errors in measurement, expression of uncertainty - accuracy and precision, propagation of errors; Measurement of voltage, current and power in single and three phase circuits; True rms meters, Digital voltmeter, digital multimeter, Oscilloscope; Shielding and grounding; Digital to Analog converters and Analog to Digital Converters.

Sensors and Scientific Instrumentation: Resistive, capacitive, inductive sensors and associated signal conditioning circuits; Temperature measurement (thermocouple, RTD (3/4 wire), thermistor; Light intensity measurement (LDR, photodiode, phototransistor); Strain gauges, Pressure gauges.

Basic Physics: Basic mechanics: Newton's laws, Stress-Stain relationship; Basics of Ohm's law, drift velocity, mobility; Two terminal and four terminal I-V measurements, advantages and disadvantages; X -Ray Generation, Bragg's law and its applications; Metal and Insulator; Units and Dimensions of different physical quantities.

General Skills: Quantitative and Numerical Ability, Analytical Ability, Comprehension and General Awareness and General English.

Post Code: 2207 Junior Technician (Mechanical Engineering) - Level I

General Aptitude: Quantitative and Numerical Ability, Analytical Ability, Comprehension and General Awareness and General English

AICTE approved syllabus for Diploma in Mechanical Engineering, Directorate of Technical Education approved syllabus for ITI (Welder/fitter/machinist/electrician).

For further details please refer to the mechanical engineering curriculum in AICTE model curriculum for diploma in engineering and technology - 2019.

Post Code : 2208 Junior Technical Superintendent - Level I

Engineering Mechanics: Equilibrium of rigid bodies, free body diagrams, analysis of beams and trusses, shear force and bending moment diagrams, Coulomb Friction.

Strength of Materials: Stress: Normal stress, shear stress, stress transformation; Strain: normal strain, shear strains, strain-displacement relation, strain transformation, Strain measuring techniques; Stress-strain diagrams, analysis of axial, bending and torsional members, Buckling of columns, Concept of shear center and shear flow.

Basic Electrical Engineering: Measurements: single and three phase circuits, voltmeter, multimeter, oscilloscope, digital to analog converters and analog to digital converters; Sensors and Instrumentation: resistive, capacitive, inductive sensors; temperature and light intensity sensors; Circuit Analysis: operational Amplifier, RLC Circuit, AC circuit power Analysis

General Aptitude: Quantitative and Numerical Ability, Analytical Ability, Comprehension and General Awareness and General English.

Final selection will be based on the performance in Level I and Level II exams.

Schedule of Examinations	
Date	Post
10-Jun-2023	Junior Assistant (Post Code:2204) Junior Technical Superintendent- Systems (Post Code:2203)
11-Jun-2023	Junior Technician- Physics (Post Code:2205) Junior Technician- Mechanical Engineering (Post Code:2207) Junior Technical Superintendent (Post Code:2208) Junior Technician-CIF (Post Code:2206)

All the Level I exams shall be conducted at IIT Palakkad, Nila Campus, Kanjikode, Palakkad, Kerala - 678623, details of which shall be shared with shortlisted candidates over email.

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Registrar(i/c)