

The written examination will be of two tier - Objective and Subjective types.

**Objective:** Multiple Choice Questions

- No. of Questions: 70
- Marks :70
- Duration: 1 hour.
- **The distribution is 50 marks - Technical ability & General Science + 20 marks (General Intelligence, Reasoning, General awareness, Arithmetic).**

**Descriptive / subjective will be of 30 marks - (20 marks-Professional, 10 marks – Proficiency in English Language (Precis writing and comprehension) ) Duration- 1 hour.**

- Total marks: 100.

**Qualifying Marks (Objective and Subjective taken together):**

**The minimum percentage of marks required to qualify for further process shall be as follows for various categories:**

**UR- 50%, OBC-NCL/SC/ST- 40%**

**SYLLABUS FOR THE POST OF JE (ELECTRICAL)**

**a) Technical:**

1. Different systems of Power Generation — basic knowledge, merits & demerits.
2. Power Distribution System: overhead & underground systems, construction & maintenance practices, classification of voltages.
3. House / domestic wiring & industrial wiring: Single phase and three phase distribution, two way circuits, testing & energization procedures.
4. Electrical Substations — Schematic line diagram, working principles, functions of Transformers, CT & PT units, Circuit Breakers, Gang Operating Switches, Drop Out Fuses, MCBs, MCCBs, Change Over switches, their maintenance, troubles & trouble shooting, concept of maximum demand, connected load, demand factor, diversity factor, power factor, energy tariff. Power shut down procedures. Tests of transformers & conditions of parallel operation. Power factor improvement methods.
5. Earthing of Electrical installations and its importance, types of earthing, measurement of earth resistance, maintenance of earthing systems.
6. Safety requirements while working on Electrical installations, checks to be carried out before commissioning of new electrical equipment's / installations. Reporting & dealing of electrical accidents, electric shock, shock treatment, extinguishing of electrical fires & knowledge of use of fire extinguishers, Indian Electricity Rules & Act.
7. AC & DC circuits, Ohm's Law, Kirchhoff's Law, series parallel circuits, laws of magnetism, electromagnetic induction, Fleming's rules — left hand & right hand, current, voltage, resistance, power, energy, HP. Calculation of energy consumption.
8. Cables, wires, insulators, insulation resistance, insulating materials, different types of joints -basic knowledge. Laying of cables, faults in cables & identification methods.

9. Illumination — fundamentals of illumination, types of lamps & accessories and their applications. Concepts of various lighting schemes - indoor lighting, street lighting & yard lighting etc. Energy efficient lighting systems.
10. Pumps — Working principle, types of pumps, their applications & selections, starters, over load relays, single phase preventer- wiring diagram, trouble shooting.
11. AC Machines: working principle & construction of alternators and various type of AC motors, starters- DOL and star-delta, their wiring/ connection diagrams.
12. DC Machines: working principle, construction & characteristics of generators, DC Motors, starters & their wiring/connection diagrams.
13. Cells & batteries: rechargeable dry cells, lead acid cells, VRLA cells, SMF batteries, battery charging, recording of specific gravity and voltage, maintenance of batteries & battery chargers.
14. Basics of air conditioning, refrigeration cycle, working principles of refrigerator, water coolers, fans, air conditioning units, power supply connection wiring diagrams. Refrigerants and their properties.
15. Working principle and applications of Electrical measuring instruments like Megger, Earth Tester, Lux meter, Ammeter, Voltmeter, Anemometer, Kwh meter, Multimeter, Watt-meter.
16. Energy auditing, energy conservation measures, Global warming, Green energy.

b) Mathematics: Knowledge of up to std. X level.

c) Knowledge of English, grammar of upto std. X level.

d) Reasoning, Aptitude and General Knowledge.

iv. The selected candidates under GDCE will have to pass prescribed training courses prior to appointment to the post for which they are selected under GDCE.

v. The date, time and venue of the written examination will be fixed by Corporate Office/KRCL and will be intimated to the eligible candidates in due course through messages on mobiles, e-mails registered in the applications and on website of KRCL. Request for postponement of the written examination and change of Center/venue will not be entertained under any circumstances.

vi. During written examination, candidates should follow the instructions scrupulously. Failure to comply with the instructions may lead to disqualification of candidates.

vii. The questions will be in 02 languages i.e. Hindi and English. The candidate will have to choose any one of these languages. In case of any discrepancy between various versions, the English version will prevail.

## 10. DOCUMENTS TO BE UPLOADED:

**1. Photograph:** A color passport size photograph of not older than three months, with clear front view of the candidate, without cap and sunglasses, should be uploaded in the space provided. KRCL may reject the applications for uploading old, unclear photo or for any significant variations between uploaded photograph and the actual physical appearance of the candidate. They are also advised to keep extra copies of the same photograph for Document Verification. Application without photograph is liable to be rejected.

**2. Signature:** Candidates should upload their signature in the appropriate column of the application. Application without signature OR signed in capital letters/spaced out letters is liable to be rejected.

# Konkan Railway Corporation Limited



## KRCL Junior Engineer Syllabus - Subject Wise

### KRCL JE GDCE General Intelligence Syllabus

- Analogies.
- Similarities and Differences.
- Relationship concepts.
- Arithmetical Reasoning.
- Spatial Visualization.
- Discrimination.
- Visual Memory.Arithmetic Number Series.
- Spatial Orientation.
- Observation.
- Coding and Decoding etc.
- Figures Classification.
- Non-verbal series.

### KRCL JE Electrical Reasoning Ability Syllabus

- Coding and Decoding
- Clock and Calendar
- Time Sequence, Number & Ranking Test
- Cube and Dice
- Mathematical Operation
- Arithmetical Reasoning
- Statement and Reasoning
- Completion of Figure
- Paper Cutting and Folding
- Syllogism
- Matrix Reasoning
- Series
- Classification
- Number Puzzle
- Logical Sequence of Words
- Venn Diagrams
- Blood Relation
- Analogy
- Direction and Distance

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- Visual Reasoning

## Konkan RCL Jr Engineer Electrical General Awareness Syllabus

- Indian Economy
- Indian geography
- Indian Polity
- General scientific and technological developments
- <https://www.freshersnow.com/syllabus/>
- Environmental issues concerning India and the World
- Knowledge of Current affairs
- Culture and history of India including freedom struggle

## KRCL Junior Engineer Arithmetic Syllabus

- Average
- Number System & Simplification
- Probability Algebraic Expressions and in Equalities
- Profit and Loss
- Number Series
- Speed, Distance & Time
- Time and Work
- HCF & LCM
- Time and Work & Pipes and Cisterns
- Mixture & Allegations
- Data Interpretation
- Number System
- Speed, Time & Distance (Train, Boats & Stream)
- Mensuration
- Trigonometry
- Geometry
- Simple & Compound interest
- Ratio and Proportion & Partnership
- Percentage

## KRCL JE GDCE English Syllabus

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- Grammar.
- Direct/Indirect Speech.
- Active & Passive voice.
- Antonyms & Synonyms
- Vocabulary.
- Parts of Speech.
- Comprehension.
- Cloze test.