

KRCL Junior Engineer Recruitment 2021 Syllabus

SYLLABUS FOR THE POST OF JE (ELECTRICAL)

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.
- 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 Centre/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.