

WCL Mining Sirdar & Assistant Foreman Exam Pattern / Syllabus

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(6) SELECTION PROCESS

- i. Eligible candidates meeting the minimum eligibility criteria as on the Cut-Off date, as specified in this Notification, will be required to appear for a Computer Based Test for which time, date and venue will be communicated through admit cards issued through the official website/recruitment portal.
- ii. The CBT will be of 100 questions (Part 1 General Aptitude - 20 questions; Part 2 Technical - 80 questions) and each question will carry 01 mark. The duration of the CBT shall be 90 minutes. The test will consist of multiple-choice questions with four options of answer of which one option will be the correct answer. There will be no negative marking for any wrong answer. No marks will be awarded for unattempted questions. The question paper shall be bilingual i.e. in English and Hindi only. However, in case of any error/ambiguity in English and Hindi versions of the question, the English version of the question shall be valid and final.
- iii. Maximum marks of the CBT and minimum qualifying marks for respective category of candidates shall be as mentioned below (**Table 6**):

Sl. No.	Post	Maximum Marks	Category of Candidates	Minimum Qualifying Marks
1	Mining Sirdar in T&S Grade-C	100	UR & EWS OBC(NCL) SC/ST	50 Marks 45 Marks 40 Marks
2	Assistant Foreman (Trainee) (Electrical)/Electrical Supervisor, T&S Grade- C	100	UR & EWS OBC(NCL) SC/ST	50 Marks 45 Marks 40 Marks

- iv. Candidates will be allowed to appear in the CBT on the basis of their declaration regarding their eligibility, in the online application. Scrutiny/Verification of the applications with original documents/certificates of shortlisted candidates will be done after declaration of result of the CBT which will be published on WCL website after successful completion of the CBT.
- v. Candidates shall be shortlisted on the basis of marks obtained in the CBT. Such shortlisted candidates will be called for scrutiny/verification of documents/certificates as per merit in the respective category. The zone of consideration for scrutiny of documents shall be 3 (three) times the number of vacancies in each of the categories. The candidates shall have to appear along with a printed copy of the application, original certificates/documents & one set of self-attested photocopy of each certificate/document as per the eligibility criteria notified in this advertisement for scrutiny/verification. If the particulars mentioned in the application/documents regarding age, caste, educational/technical qualification, competency and other details do not match or are not found to be in conformity with the eligibility criteria mentioned in this notification, the candidature of such applicants shall not be considered for empanelment and their candidature shall stand rejected. The date, time and venue for scrutiny/ verification will be notified on the official website of WCL.

The candidates who do not appear for document verification before WCL Authorities on the notified date of document verification/scrutiny, shall also not be considered for final empanelment for appointment.

- vi. After scrutiny/ verification of documents the 'Merit panel' of candidates on the basis of their marks in respective categories will be published, in the order of marks scored, in the official website of WCL.
- vii. In case of a tie in marks obtained in the CBT, it will be resolved first on the basis of Date of Birth (elder being the first) and then by alphabetic order of their first name as appearing in the Matriculation certificate will be considered for deciding the merit position.
- viii. A provisional offer of appointment will be issued to the selected candidates in accordance with their relative merit position and with due consideration of the reservation of posts to the reserved category candidates against vacancies.
- ix. If it is found during the Scrutiny/ Verification, or during the probation period, or even during the course of employment, that the candidate is not fulfilling the criteria of eligibility in any respect, his/her candidature will be cancelled, and appropriate action will be initiated against him.

Syllabus for the Post of Mining Sirdar, T&S Grade- CPart 1

- General English, Comprehension, verbal and non-verbal reasoning
- Logical reasoning and analytical ability
- Quantitative aptitude, Basic Numeracy (Numbers and their Relations, Orders of Magnitude, etc. - Class X level)
- Data Interpretation (charts, graphs, tables, data sufficiency etc. - Class X level)
- General awareness regarding current issues of national importance and Coal Industry

Part 2

- Explosive and Blasting Practice in Opencast and Underground coal mines.
- **Method of work** - Board and pillar development and depillaring, Other mechanized method, (Mass production technology), Line of goaf, Method of depillaring, Air blast, Contiguous working,
- **Support** - Strata control and monitoring plan (SCAMP) and instrumentation, Roof bolting (cement/ Resin), anchorage testing of bolts, quality of support, withdrawals of supports, Method of timbering and setting of supports, withdrawals of supports
- **Stowing** - Purpose, Method, Ratio, difficulties and remedial measures, subsidence and different material used for stowing / filling in UG mines.
- **Opencast working** - Method of work, mechanized and manual methods; deep hole drilling and blasting; shovel and dumpers; dragline; surface miner; benching; maintenance of haul roads; precautions while extracting developed pillars by opencast method and other safety precautions; methods of reclamation; dump management; Bench & Dump slope monitoring, Traffic Rules & Regulations; LMV road;
- **Drifting** - Purpose and gradient; manual/mechanized; Support; Ventilation; Blasting
- **Geology** - Formation of coal; Geological disturbance and precautions
- **Mine Surveying** - in UG and OC mines. Plans & Section
- **Danger of inundation** - in UG and Opencast Working; approaching water logged working, water dam, conditions in coal mines regulations 2017,
- **Mine Fires** - Surface & Underground, Fire fighting techniques, precautions against fire, spontaneous heating, isolation stopping, Fittings & inspection
- Mine Rescue
- **Mine Ventilation & Mine gases** - detecting, precautions, instruments, effects, gas chromatography, air sampling, gas explosions.

- Duties of Sirdar, Inspection, Persons under him, quality of inspection, charge hand over / taking over, Report book.
- Man riding systems in UG mines.
- Winding in shaft and safety devices. Haulage roadway, Travelling roadway, Belt Roadway, Lighting, white washing, Means of Access & Egress
- **Shaft sinking**- Method of shaft sinking, Support, Lining
- **Coal dust** - Regulations, Precautions, Explosions, Stone dust barrier, Gravimetric/Personal dust sampler
- **Accident** - Fatal, Serious, reportable, Dangerous occurrence, Near miss, causes and preventions
- **Face machineries** - SDL, LHD, Continuous miner and its package, Belt conveyor, UDM, Haulage, Haulage rope, Face pump, Drill machine.
- **Electrical** - Electric cables, Switches, FLP enclosure, intrinsically safe and other electrical devices used in UG mines.
- Provisions of the Mines Act 1952 , Coal Mines Regulations 2017 , Mine Rules and Bye- laws made under , DGMS circulars relating to the safety of persons employed in mines in general and to the duties of Sirdar's and Shotfirer's in particular.
- Writing of reports

Syllabus for the Post of Assistant Foreman (Trainee) (Electrical)/Electrical Supervisor, T&S Grade- C

Part 1

- General English, Comprehension, verbal and non-verbal reasoning
- Logical reasoning and analytical ability
- Quantitative aptitude, Basic Numeracy (Numbers and their Relations, Orders of Magnitude, etc.) (Class X level)
- Data Interpretation (charts, graphs, tables, data sufficiency etc. Class X level)
- General awareness regarding current issues of national importance and Coal Industry

Part 2

- **Basics of Electrical Engineering:** Ohm's Law, Kirchoff's law connections in series, parallel, Power factor and its improvement, Contract demand, Maximum demand, , Energy Conservation measures, Megger, Safety devices in Electrical system, PPE, Measuring equipments used in electrical systems.
- **Power generation economics:** Load factor, Diversity factor, Billing Cycle etc. Capacitor bank, APFC, AVR etc.
- **Electrical Machineries:** Operation, maintenance and pre-commissioning test, different types of motors (AC&DC). Types of Motors and their load characteristics. Operation, maintenance and pre-commissioning test of different types of generators. Operation, maintenance and pre-commissioning tests of different types of transformers. CT,PT, Auto transformer etc. Machineries/Equipment related to renewable generating stations. Battery operated vehicles and Locomotives.
- **Electric Drives and Control:**
 - Operation maintenance of Different types of starters including AC Drives such as VFDs etc., DC Drives, soft starters etc.,
 - PLC, SCADA and DCS
- **Switchgear and protective devices:** Operation maintenance, pre-commissioning tests of different types of circuit breakers, different types of protective schemes/protective devices and their operation maintenance and relay co-ordination
- **Earthing system:** Requirements, types of earthing, maintenance, chemical earthing and relevant provisions of IS - 3043
- **Neutral system of power supply:**

- Solid neutral earthing, restricted neutral earthing, isolated neutral earthing, advantages /disadvantages
- Provisions of the Regulation for suitably designed restricted neutral system of power supply including neutral-ground monitoring protection system.
- **Design and layout of sub-station, Safety in sub-station, switchyard and switchboards:**
 - Safe working clearance.
 - Guarding of live apparatus.
 - Operation and maintenance of circuit breakers, isolators, arresters, SPD, instrument transformers, storage tanks etc.,
 - Operation and Maintenance of substations and generating stations including maintenance of storage battery and related auxiliaries.
- **Operation and maintenance of substations and generating stations including maintenance of storage battery and related auxiliaries**
- **Operation, maintenance of overhead lines and underground cables Safety measures in over headlines**
 - Types of stays, its markings, grouting, stay insulator, binding etc.,
 - Types of guarding and clearances, earth/neutral wire, anti- climbing devices, and their erection
 - Selection and fixing of control devices viz. Linked switches, fuses, isolators, earthing switches and lightning arrestors/surge diverters etc.
 - Cables and conductors, their classification, construction, insulation types, laying, mining type cables and the related standards, cable jointing techniques, terminations and junction boxes
- **General safety:** Procedure for obtaining permission to work for. carrying out operations and maintenance of electrical equipment (permit to work as per IS:5216). Safety in electrical workshop, Firefighting equipment, their type, use and periodical maintenance, indicators, recorders etc., First aid training, resuscitation of persons suffering from electric shock etc.,Various Lightning protections.
- **Legislation/statutes as amended from time to time:**
 - Provisions of Central Electricity Authority (Measures relating to safety and electric supply), Regulations 2023
 - Provisions of Electricity Act,2003
 - NBC 2016 with updates
- **On-Site emergency management plan in case of contingency related to electricity:**
 - Emergency response procedure including response to off-site emergency management plan and crisis and disaster management plan