

SYLLABUS

(Mining Sirdar T&S Gr-C)

PART -A	<u>GENERAL ASSESSMENT</u> i. General Knowledge and Current Affairs ii. Reasoning & Mathematical Ability iii. Awareness about Coal Industries	20 questions	20 Marks
PART -B	<u>DOMAIN KNOWLEDGE</u> 1) Method of examining roof and sides of working places and roadways etc. 2) Method of timbering and setting of supports, roof bolting, anchorage testing, withdrawals of supports, Preliminary idea about Salvaging of longwall face equipment. 3) Safety issues regarding Stowing operations, working near water bodies or unconsolidated mass. 4) Examination of Sumps. 5) Shot-firing and transport and use of explosives in mines. 6) Ventilation and mine gases- elementary. 7) Safety issues in Opencast Workings over developed pillars, Working at heights, manual handling / handling of heavy materials, Marching of heavy machines. 8) Preliminary idea about Reclamation operation in opencast mining. 9) Preliminary understanding about Safety Management Plan. 10) Provisions of the Coal Mines Regulations 2017 , Rules and Bye-laws made under the Mines Act 1952/ Occupational Safety, Health and Working Conditions Code, 2020, relating to the safety of persons employed in mines in general and to the duties of Sirdar's and Shotfirer's in particular. 11) Writing of reports.	80 questions	80 Marks
TOTAL		100 questions	100 marks

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SYLLABUS

(Jr.Overman T&S Gr-C)

PART -A	<u>GENERAL ASSESSMENT</u> i. General Knowledge and Current Affairs ii. Reasoning & Mathematical Ability iii. Awareness about Coal Industries	20 questions	20 Marks
PART -B	<u>DOMAIN KNOWLEDGE</u> 1) <u>General Safety and Legislation</u> Duties and responsibilities of workmen, competent persons and officials (excluding managers, assistant managers); discipline amongst workers and control of staff. Provisions of the Coal Mines Regulations, 2017, relating to Coal mine working; explosives and shotfiring; loading, transportation and dumping; precautions against danger from fire, dust, gas and water and of other provisions and Rules, enforcement of and compliance of provisions under the regulations to which overman is responsible. Writing of reports required to be made by overman under the regulations. Hazard Identification, risk assessment and risk management, safety management plan. Mine Gases: Generation, Properties and Effects, Detection of Mine Gases, Methanometers and Multi Gas Detectors, Gas Chromotograph, Flame Safety Lamps. Dangerous occurrences in mines and dealing with the same; accidents, their causes and preventions; accident reports; not disturbing the place of accident. Mine rescue; physiological effect of mine gases; rescue equipment and First Aid. Sanitation and health; miners' diseases, their symptoms and preventions, Occupational Safety, Health and Working Conditions Code, 2020. 2) <u>Methods of working</u> Nature of occurrence of coal seams; geological disturbances and their effects on working conditions; dangers and precautionary measures while approaching geological disturbances areas. The purpose and utility of boreholes in mines; shaft sinking; safety devices; temporary and permanent supports in sinking and working shafts; examination of shafts and outlets. Opencast methods of mining; mechanized and manual methods; deep hole drilling and blasting; shovel and dumpers; dragline; bucket wheel excavators; surface miner; benching; maintenance of haul roads; precautions while extracting developed pillars by opencast method and other safety precautions; methods of reclamation; dump management; high wall mining. General principles of bord and pillar and longwall	80 questions	80 Marks

	<p>method; multi-section workings; methods of depillaring under different conditions; mechanized pillar extraction; precautions to be taken while working near/beneath waterlogged areas; roof convergence and convergence measuring devices etc., stone drifting. Elements of roof control Rock Mass Rating (RMR) of roof strata; mechanism of roof bolting; support of roadways; face supports and their types, setting, testing and withdrawal; systematic support rules; packing and stowing; protection of surface structures; working beneath statutorily restricted areas and surface structures. Safe handling and use of explosives in coal and stone; simultaneous short firing; blasting in fire areas in opencast mines; safety precautions. Inspection of workings; inspection and maintenance of haulage and travelling roadways; man riding system and return airways; gates and fences etc. Suppression and treatment, sampling and analysis of mine dust. Sources of danger from surface water and underground inundation; precaution to prevent inundation and irruption of water; water dams, water danger plans. Gates and fencing, different kind of fences. Reading of statutory plans.</p> <p>3) <u>Ventilation, Precautions against Explosions, Fires and Inundation</u> Natural and mechanical ventilation ; ventilation of headings and sinking shafts; siting of auxiliary and booster fans; distribution, measurement and control of air in mines; estimation of air quantity requirements; methods of coursing of air; anemometer; hygrometer; maintenance of ventilation appliances. Pollution of air; irruption/occurrence of gases in mines; properties of gases; detection and measurement of firedamp and noxious gases; sampling of air; determination of environmental condition; standards of ventilation. Design and construction of flame and electric safety lamps; their use, examination and maintenance. Suppression and treatment of coal dust; suitability of stone dust; sampling and analysis of mine dust. Elementary knowledge of causes and prevention of firedamp and coal dust explosion, limits of inflammability of firedamp. Prevention, detection and control of spontaneous heating / fire; sealing off fire areas; fire stopping and their examination; precautions against outbreak of surface fires; fire fighting on surface and belowground. Inspection of old workings. Sources of danger from surface and underground water, precaution to prevent inundation and irruption of water; precautionary measures while approaching abandoned and water logged areas, boring machines for exploratory work; water dams; water danger plan. Recovery of mines after explosions, fires and inundation; precautionary measures during re-opening and dewatering of mines.</p>		
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	<p>4) <u>Elements of Mining Machinery</u></p> <p>Safety aspects and safe use of different kinds of machinery used in underground and opencast mines e.g. SDLs, LHDs, Continuous Miners, Shuttle Cars, Crushers, Conveyors, blast hole drills, rippers; scrappers; shovels; draglines; dumpers; road graders; dozers; wheel loaders; bucket wheel excavators; spreaders; surface miners; Brakes (including service and parking brakes); Use of steam and internal combustion engines in mines. Application of electricity in mines; safety precautions. Winding equipments; ropes and guides; signaling and decking arrangements; safety devices; examination of winding equipments and shaft fittings. Haulage and transport; types of haulage; rope haulage and locomotives; self-acting inclines; haulage roads in underground and opencast working; rails and tracks; their maintenance and inspection; tubs; signaling; safety devices; codes of practices; traffic rules; unsafe practices; derailments. Different types of pumps; principles and use of siphons; drainage and water lodgments. Code of practice for transport, installation, erection, use and shifting of underground and opencast machinery. Belt conveyors and safety appliances.</p>		
TOTAL	100 questions	100 marks	

SYLLABUS

(Surveyor T&S Gr-B)

PART -A	<p><u>GENERAL ASSESSMENT</u></p> <p>i. General Knowledge and Current Affairs ii. Reasoning & Mathematical Ability iii. Awareness about Coal Industries</p>	20 questions	20 Marks
PART -B	<p><u>DOMAIN KNOWLEDGE</u></p> <p>1) Linear and Angular Measurements. 2) Area & Volume calculations 3) Theodolite traversing. Levelling. 4) Trigonometry & Rectangular Co-ordinate calculations. 5) True North determination. 6) Triangulation. 7) Topographic Survey. 8) Tacheometry Survey. 9) Survey Adjustments & Theory of Errors. 10) Contouring. 11) Underground Mine Surveys & Opencast Mine Surveys. 12) Correlation of underground & Surface Surveys. Subsidence Survey. 13) Surveys for Construction and Development Purpose: Responsibilities of Survey Department at the Mine Construction Phase. Setting out Geometrical Elements. Setting out Direction of Workings. Setting out Rail Curves on Surface & Underground. Surveys during Drivage by Approaching Headings. 14) Dip, Strike and Fault Problems. 15) Coal Heap Measurement. Overburden Measurement. 16) Duties & Responsibilities of a Surveyor as per Coal Mines Regulations 2017. PLANS: Types of Plans Statutorily required as per Coal Mines Regulations 2017. Accuracy in Underground & Surface Surveying as per the Statute. Plan Accuracy. Knowledge of various provisions under Coal Mines Regulations 2017 and Circulars of DGMS regarding Mine Surveying/ Occupational Safety, Health and Working Conditions Code, 2020. 17) Total Station, DGPS, 3DTLS & Drone surveying in Opencast Mines. 18) Application of Computers & Software in Mine Surveying (SURPAC, LISCAD etc.) 19) Elementary Knowledge in –Remote Sensing & GIS, Geomatics.</p>	80 questions	80 Marks
TOTAL		100 questions	100 marks

SYLLABUS

(Technician (Pathology) Tr. T&S Gr-C)

PART -A	<u>GENERAL ASSESSMENT</u> i. General Knowledge and Current Affairs ii. Reasoning & Mathematical Ability iii. Awareness about Coal Industries	20 questions	20 Marks
PART -B	<u>DOMAIN KNOWLEDGE</u> 1) Anatomy 2) Clinical pathology 3) Pathologic basis of diseases 4) Clinical, biochemical parameters 5) Microbiology 6) Haematology and Parasitology 7) Blood bank management 8) Anaemia, Malaria, Dengue, Chronic kidney Disease, Diabetes 9) General Medical Knowledge	80 questions	80 Marks
TOTAL		100 questions	100 marks

SYLLABUS

(Translator (Tr.) OL Clerical Gr-III)

PART -A	GENERAL ASSESSMENT i. General Knowledge and Current Affairs ii. Reasoning & Mathematical Ability iii. Awareness about Coal Industries	20 Marks
PART -B	DOMAIN KNOWLEDGE राजभाषा हिंदी / Official Language Hindi <ul style="list-style-type: none">राजभाषा नीति एवं प्रावधान: संविधान के अनुच्छेद 343-351, राजभाषा अधिनियम एवं नियम / <i>Official Language Policy & Provisions: Constitutional Articles 343-351, Official Language Act & Rules</i>हिंदी व्याकरण / Hindi Grammarराजभाषा हिंदी: कार्यालयी शब्दावली, नोटिंग-ड्राफ्टिंग / <i>Official Hindi: Official terminology, noting & drafting</i>हिंदी का प्रगामी प्रयोग: राजभाषा कार्यालयन, वार्षिक कार्यालयन, प्रगति रिपोर्ट / <i>Progressive Use of Hindi: Implementation, annual programme, progress reports</i>हिंदी टंकण: यूनिकोड टाइपिंग, ई-ऑफिस हिंदी का प्रयोग / <i>Hindi Typing: Unicode typing, use of Hindi in e-Office</i>	20 Marks
	सामान्य अंग्रेजी / General English <ul style="list-style-type: none">अंग्रेजी व्याकरण / English Grammarशब्द भंडार: पर्यायवाची, विलोम, अनेक शब्दों के लिए एक शब्द / <i>Vocabulary: Synonyms, Antonyms, One-word substitution</i>मुहावरे एवं वाक्यांश / <i>Idioms and Phrases</i>(05 marks) गद्यांश: पैसेज पढ़कर प्रश्नों के उत्तर देना <i>Comprehension: Reading passages and answering questions</i>लेखन कौशल: वाक्य संशोधन, त्रुटि सुधार <i>Basic Writing Skills: Sentence formation, error correction (Descriptive Type)</i>	10 Marks
	कंप्यूटर ज्ञान / Computer Knowledge <ul style="list-style-type: none">कंप्यूटर मूलभूत ज्ञान: हार्डवेयर, सॉफ्टवेयर/Computer Fundamentals: Hardware, Softwareएमएस ऑफिस: वर्ड, पावरपॉइंट (मूल संचालन) / <i>MS Office: Word, Excel, PowerPoint (basic operations)</i>इंटरनेट एवं ईमेल: ब्राउज़िंग, ईमेल शिष्टाचार / <i>Internet & Email: Browsing, email etiquette</i>साइबर जागरूकता: सुरक्षा, वायरस, सुरक्षित उपयोग / <i>Cyber Awareness: Basic security, viruses, safe usage practices</i>ई-ऑफिस एवं डिजिटल कार्यालय / <i>e-Office & Digital Work: Basic usage of e-Office systems, digital file handling, and online collaboration tools</i>	10 Marks

	<p>अनुवाद / Translation</p> <ul style="list-style-type: none"> • (10 Marks) हिंदी से अंग्रेजी एवं अंग्रेजी से हिंदी अनुवाद (गद्यांश आधारित) (वर्णनात्मक) Translation from Hindi to English and vice versa (passage- based) (<i>Descriptive type</i>) • (10 Marks) आधिकारिक/पशासनिक अनुवाद: नोटशीट, पत्र, कार्यालय आदेश (वर्णनात्मक) Official/Administrative Translation: Notesheets, letters, office orders (<i>Descriptive type</i>) • पशासनिक शब्दावली: राजभाषा शब्दावली एवं पारभाषिक शब्दावली Administrative terminology: Official Hindi glossary and technical terms 	30 Marks
	<p>पशासनिक ज्ञान /Administrative Knowledge</p> <ul style="list-style-type: none"> • (05 Marks) Office Procedure: File system, noting & drafting / कार्यालयीन प्रक्रिया: फाइल प्रणाली, नोटिंग एवं ड्राफ्टिंग (<i>Descriptive type</i>) • Types of Official Correspondence: Office orders, circulars, memoranda / शासकीय प्रचार के प्रकार: कार्यालय आदेश, प्रपत्र, पत्र • Record Management: Record keeping and document maintenance / अभिलेख प्रबंधन: रिकॉर्डिंग की प्रणाली, दस्तावेज संधारण • Basic understanding of organizational structure and functioning / संगठनात्मक संरचना एवं कार्यालय प्रणाली की मूल समझ • सेवा विनियम एवं आचरण / Service Rules & Conduct: Basic service rules, leave rules, and code of conduct for employees 	10 Marks
TOTAL	100 Marks	