Syllabus for Mine Management, Legislation and General safety

Part test 1:

- Introduction: Evolution of management; theory and practice, principles of scientific management; elements of management function; planning; organisation and control; structure and design of organisation for mining enterprises.

- Mining Environment: EIA (Environment Impact Assessment), EMP (Environment Management Plan), ETP (Effluent Treatment Plant), STP (Sewage Treatment Plant) threat to environment from underground and surface mining, means of mitigation, treatment of pollutants, monitoring systems, water management; mine closure plan; R&R (rehabilitation and resettlement).


Part test 2:

- Personal Management and Organisational behaviour: Selection; training and development of human resources for mining enterprises; leadership; study of traditional leader behaviour; autocratic; democratic and Laissez-Faire behaviours; conflict management; conflict in organisation; sources of conflict; dealing with conflict; organising for conflict resolution; conflict and growth; individual motivation; two way personal communication.

- Economic Impact of Mining: Economics of mining, effect on community – before, during and after mining; corporate social responsibility (CSR).

- Mines Rules, 1955
- Mines Rescue Rules, 1985

Part test 3:

- Production Management: Determination of norms and standards of operations by work study; analysis of mine capacities and capability; production planning; scheduling and control; short term and long term planning; productivity; concepts and measurements; application of Ergonomics in mine operation.

- Mine Vocational Training Rules, 1966

- General Safety in Mines: Safety in Mines: Duty of care; occupational hazards of mining; causes and prevention; accidents and their classification; accident statistics; frequency rate and severity rates; cause-wise analysis; basic causes of accident occurrence; investigations into accidents and accident reports; in-depth study into various causes of accidents; measures for improving safety in mines; TRAP (take responsibility in accident prevention); cost of accident; safety management system; contribution of human elements in mine safety; workers participation in safety management; ISO and safety audit; safety conferences; tripartite and bipartite committees; mine environment monitoring and control; role of information technology in safety
management.

Part test 4:

- Financial Management: Capital budgeting; techniques for mining project; project evaluation; pay back period and IRR; methods of cost analysis and cost control; break-even charts; working capital management; ERP (Enterprise Resource Planning).

- Provisions of Indian Electricity Rules, 1956 applicable to mines;

- Notified and occupational diseases; silicosis and pneumoconiosis; physiological aspects of breathing in dust laden atmosphere; dust sampling and sampling instruments; methods of counting and analysis; other mines diseases and their symptoms; prevention and treatment.

- Lighting: general principles of artificial lighting; lighting standards and their assessment.

Part test 5:

- Materials Management for mining sector; ABC analysis, Inventory Management.

- Industrial Accident: Study of human factors of industrial accidents; their causes and remedies.

- Risk Management: Theory and application, baseline, continuous and issue based risk assessment, risk management techniques and applications, means of managing (minimizing or eliminating) risk, computer application and simulations, manager’s role in risk management, due diligence, application of risk assessment and risk management with reference to due diligence.

- Disaster management; Emergency services, equipments and procedures, emergency control rooms, rescue and recovery; procedure and responsibilities, safety of persons engaged in emergency response, investigations and reports; assessment of damage, mine rescue; mine gases and their physiological effects; rescue equipments; resuscitation and reviving apparatus; selection and training for rescue work. First aid and ambulance work.

- Sanitation and health in mines.

- Safety related issues in coal beneficiation and transport.