



COAL INDIA LIMITED  
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No.CIL:C5A(i):50254:NE :

Dated : 10<sup>th</sup> June 2011

Director(Personnel)  
ECL/CCL/BCCL/SECL/WCL/MCL/NCL  
Director(Operation) CMPDI  
CGM(MP&IR) CIL  
CGM NEC Assam

**Sub: Syllabus for departmental selection from non-executive to executive cadre in E&T and PR discipline/additional topics of HR discipline, clarification over syllabus of Security Discipline & Syllabus of paper-I (internal notification dated 8.3.2010)**

Dear Sir,

Further to our letter No.CIL:C5A(i):50254:NE:696 dated 10<sup>th</sup> May 2011, we are forwarding herewith approved syllabus of Paper-II in respect of E&T and PR Disciplines and also additional topics to be included in the syllabus of HR/Personnel Discipline.

It is pointed out that vide our letter dated 10<sup>th</sup> May 2011 we have inadvertently mentioned Welfare/Personnel Discipline which may be read as "HR /Personnel"

It is also clarified that :

(i) **Part-B** of the syllabus of Security Discipline under the head "Regarding Legal Matter" **has now been specifically indicated the relevant Section** as per enclosed sheet

(2) In the Syllabus of Paper-I at Sl.No.2 under the heading "Financial Performance of CIL", last three years has been indicated which should be read as **Financial Performance of CIL for last three years i.e 2008-09, 2009-10 & 2010-11**

Kindly advise HRD of your company for arranging necessary training to the eligible candidates accordingly.

Yours faithfully,

(KS Arya)

Chief Manager(Personnel)

Encl: As above/-

Copy to:-

ED IICM Ranchi  
CGM(HRD) CIL -with a request to kindly make necessary training in respect of eligible employees of CIL/RSOs/NEC

Copy for kind information to:-

Sr.Manager(Sectl.) to CMD of all subsidiary company

# SYLLABUS FOR NON -EXECUTIVE TO EXECUTIVE CADRE SELECTION

## ELECTRONICS & TELECOMMUNICATION

### 1. Analog Electronic Circuits:

Principles and operation of Transistors, Power amplifiers, Feedback amplifiers, Rectifiers and power supplies, Operational Amplifier. LED, LCD , Photo transistor , photovoltaic cell . Applications of Analog electronic circuits in different systems and equipments working in Coal Mines.

### 2. Power electronics:

Thyristor, Power transistor, MOSFETS characteristics and operation. AC to DC convertors, 1 phase and 3 phase, AC regulators, Inverters, Switched mode power supplies and types of UPS and operation. Applications of power electronic devices in coal mining operations.

### 3. Digital Electronic Circuits:

Transistor as a switching element; IC Logic gates , Multiplexer, Demultiplexer; A/D and D/A convertors. Applications of Computers and peripherals. Memory : RAM, ROM, EEPROM, Flash ROM. Fundamentals of Microprocessor and its Applications in Electronic and Telecommunications systems working in Coal Mines.

### 4. Electronic Measurement and Instrumentation:

Principle of working and applications of Analog Instruments , digital Instruments : volt meter, Multimeter, IC tester, Oscilloscopes and power meters. Types of electronic Road and Rail weigh bridges: principle of working, accuracy, features and its operation in Coal Mines. Mine Environmental and status monitoring systems. Types and operation of Portable and fixed monitors for CO, O<sub>2</sub>, Moisture, dust , CH<sub>4</sub>, Air Velocity, and Temperature etc. in coal mines. Intrinsically safe circuits and Flame proofing standards. Conveyor monitoring, signaling and control system in Coal mines.

### 5. Communication systems:

Difference between analog and digital communications, Basic communications elements. Fundamentals of Modulation , Digital Modulation, and demodulation. Transmission media, Types of Modems, Digital subscriber line, ADSL. Packet, Message and circuit switching, Frame relay, Telephony, Functions of switching, Stored Programmed Controlled switch, ISDN, ATM. Public switched telephone Network (PSTN), FDM and TDM in telephony, EPABX , digital EPABX features and operation. Numbering, Routing, MPLS, Voice over IP, IP/PSTN Platform, Introduction to IN(Intelligent Network), basics of GIS (Geographical Information System). Intrinsically safe Underground Communication systems and its operation in UG Mines.

### 6. Data Communication and Network:

Digital transmission, Media, UTP Cables, Switches, routers , Network topology. OSI reference model and network architecture, TCP/IP, concept and classes of IP address, LAN, WAN and introduction to Network management. Internet, security on the Internet , firewalls, intranet and extranet, domain name services, E mail, FTP, TELNET and world wide web. Types and properties of optical fiber. Applications of Optical fiber networks. Applications, features and operation of Online Intenerated Mine management system and On Line Integrated truck dispatch system in Coal mines.

**7. Wireless Communication:**

Propagation of signals at HF,VHF,UHF and Microwave Frequency and different types Radio equipment working in Coal Mines. Antenna parameters and types of antenna. LOS (Line of Sight) & Non-LOS model, interference between different wireless systems. Basics of TDMA,FDMA,CDMA and GSM. Evolution from 1G to 3G. Fundamental of satellite communication, radio spectrum and satellite antennas, Digital satellite communication systems, VSAT stations- its subsystems, applications of satellites, GPS and DTH.

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## Syllabus for Public Relations

### **Fundamentals of Public Relations, Communication and Advertising:**

Definition of Public Relations, Communications & Advertising, their communications processes.  
Basic functions of public relations.

Various types of communication like Interpersonal, Group and Mass Communications.

### **Public Relations & Corporate Communication Techniques**

The techniques of Public Relations and corporate communications like organizing Press Conferences, one on one interviews, select press briefings, floating of press releases, writing in-depth analysis on subjects concerning the organization.

### **Internal Communications**

The principles of effective internal communication using mediums like intranet, house journals, newsletters, wall posters etc.

### **Journalism and Communication / Media Management**

Journalism as a basic tool of public relations and corporate communications.

Relationship / liaison with the print media, news agencies, audiovisual media, audio (radio) media, digital media.

### **Writing Techniques in Public Relations & Corporate Communications**

Writing of Press Releases, feature writing, writing for house journal, writing for newsletters, writing copy for advertisements, messages for senior management, speeches etc.

### **Publishing:**

Process and procedures of publishing / printing of House Journal, Newsletters, Wall posters.

Coordination with advertising agencies, printers etc for timely publication of the proposed

### **Website:**

Planning and regular updating of the website with news, activities, mandatory disclosures, tenders etc.

### **Media Planning**

Analysis, selection, purchase and evaluation of media like newspapers, magazines, tabloids, and audiovisual media.

Dissemination of advertising campaigns, statutory advertisements, appointments and advertorials.

INS accreditations, DAVP rates of media.

### **Documentation in Public Relations & Corporate Communications**

Collection, collation, study and analysis of media coverage (press as well as audio visual)

**ADDITIONAL TOPICS FOR HUMAN RESOURCE MANAGEMENT**  
**(HRM) FOR DEPARTMENTAL EXAMINATION**

- a) Recruitment and Selection including induction and orientation
- b) Training and Development, Productivity improvement
- c) Performance management and appraisal
- d) Transfer, Promotion, Leave, Travel etc.
- e) Compensation and Allowances, Payroll, Rewards and Recognitions
- f) Separation, Superannuation, Layoff, Retrenchment etc.
- g) Motivation, Employee effectiveness
- h) Organization Development and growth
- i) Leadership Development
- j) Provision for reservation in recruitment/promotion
- k) Working conditions and environment, facilities
- l) Safety, Health, Education, Social Security
- m) Disciplinary procedures
- n) Grievance and Dispute handling
- o) Negotiations, Union-Management relations

## **CLARIFICATION REGARDING SYLLABUS OF SECURITY DISCIPLINE**

### **INDIAN PENAL CODE :**

Section 96 to Section 106 , Section 141 to Section 153, 154, 159 ; Section 229 to Section 311, Section 319 to Section 342 ; Section 378 to Section 382, Section 390 to Section 392, Section 396, Section 425 to Section 432, Section 441 to Section 462.

### **CODE OF CRIMINAL PROCEDURE ;**

Section 37 to Section 44, Section 46, 47, Section 49, Section 51 to 53, Section 100, Section 106 to Section 110, Section 129 to Section 136, Section 144 to Section 148, Section 154 to Section 164, Section 225 to Section 250, Section 305, Section 353 to Section 365, Section 436 to Section 450.

### **INDIAN EVIDENCE ACT :**

Section 17 to Section 38, Section 59 and 60, Section 126 and Section 159.

### **MOTOR VEHICLES ACT ;**

Section 3 to Section 19, Section 39 to Section 56, Section 112 to Section 136.

### **ARMS ACT :**

Section 3 to Section 17, 19, 20, 21, Arms Rule 13, 17.

### **EXPLOSIVES ACT ;**

Section 5 to Section 9A, Section 9C and Section 10.

### **THE PUBLIC PREMISES (EVICTION OF UNAUTHORISED OCCUPANTS) ACT 1971 ;**

Section 2(e), 2(g), Section 5, Section 5A, 5B, 5C and Section 6, Section 8, Section 7 of Rule.

### **PRIVATE SECURITY AGENCIES (REGULATION) ACT 2005 :**

Section 2, 4, 6, 10, 12, 15, 17, 18, 21 and Section 22.