

एच आर अनुभाग
कार्यालय मुख्य महाप्रबन्धक दूरसंचार /Office of Chief General Manager

हरियाणा दूरसंचार परिषद/Haryana Telecom Circle.
107, महात्मा गांधी मार्ग / 107, Mahatma Gandhi Marg,

अम्बाला छावनी-133001/Ambala Cantt -133001



EXAMINATION NOTICE

To

1. The Sr.GMTD/GMTD BSNL
Ambala/Karnal/Hissar/Rohtak/Faridabad/Sonepat/Gurgaon/Jind/Rewari.
2. All Sr.GMs/GMs, Circle Office,Ambala.
3. Sr.GM(CM-GSM), BSNL, Haryana,Ambala.
4. DGM NTR(Mtce.) Ambala Cantt.
5. A.D(Staff) C.O. Ambala.
6. All Circle Secy. Of Recognized Unions in Haryana Telecom Circle.
7. Notice Board.

No:- E&R/Ex-5/LDCE/SDE(T)/

Dated at AB the 04 -01-2012.
06.

Sub:- Limited Departmental Competitive Examination for Promotion to the grade of Sub-Divisional Engineer(Telecom) under 33% quota to be held on 04-03-2012(Sunday).

Date of Examination-04-03-2012(Sunday).

Please find enclosed herewith BSNL HQ letter No.5-2/2009-DE(Voi-III) dated 03-01-2012 regarding the above said exam to be held on 04-03-2012. All others terms and conditions as mentioned in the earlier notification of even no. dated 18-03-2010(Copy enclosed) shall remain unchanged. Syllabus and Scheme is also attached. List of eligible candidates will be issued shortly.

THIS NOTICE MAY PLEASE BE GIVEN WIDE PUBLICITY.


(SATISH GUPTA)
AGM(HR)

O/o CGMT Haryana Circle
Ambala
T.No.0171-2603336
Fax No.0171-2603555

AD (E & R)
 4/11/2011

**BHARAT SANCHAR NIGAM LIMITED**

(A Govt. of India Enterprise)

Corporate Office :: Departmental Examination Branch

Room No. 222, 2nd Floor, Eastern Court Building, Janpath, New Delh-110 001

No.5-2/2009-DE (Vol.III)**Dated:****03-01-2012****To**

- **All The Chief General Managers, Telecom Circles, BSNL,**
- **The Chief General Manager, Kolkata / Chennai Telephones, BSNL,**
- **The Chief General Manager, Maintenance, NTR, BSNL, New Delhi**

Subject: Limited Departmental Competitive Examination for promotion to the grade of Sub-Divisional Engineer (Telecom) under 33% quota to be held on **04-03-2012 (Sunday)** – arrangements for holding of.

Sir,

I am directed to refer to this office letter of even No.18-3-2010 vide which it was decided to hold the Limited Departmental Competitive Examination for promotion to the grade of SDE(T) under 33% quota on 4-7-2010. Vide this office letter of even No. dated 29-6-2010, the said exam. was postponed till further orders due to administrative reasons.

2. Now, in compliance of Judgement dated 15-4-2011 of Hon'ble CAT, Chandigarh in OA No.505-HP of 2010 and as per the directions dated 8-12-2011 of Hon'ble High Court, Shimla in CWP No.6264/2011 the Competent Authority has decided to hold the aforesaid examination as per the following schedule:

S. No	Paper No.	Subject	Maximum Marks	Day & date	Time (IST)
1	I	Advanced Technical Paper –General (Objective Type)	100	04-03-2012 (Sunday)	10.00 hrs. to 13.00 hrs.
2	II	Advanced Technical Paper – (Special) (Objective Type)	100	04-03-2012 (Sunday)	14.00 hrs. to 17.00 hrs.

3. The vacancy position as conveyed by the Cadre controlling authority vide UO Note 2-16/2009-Pers.II dated 12-9-2011 is as follows:

Vacancy Year	Total number of vacancies under Competitive Quota (33%)	Category wise vacancy to be filled against 33% (CQ) Competitive Quota		
		OC	SC	ST
2006-07	1029	799	154	76
2007-08	546	425	81	40
2008-09	1063	825	159	79
2009-10	386	301	57	28

(Signature)

Contd....2/

4. The back log vacancies up to 2005-06 (SC-59, ST-212) shall be filled up against the vacancy years 2006-07 onwards subject to the eligibility of candidates.

5. All other terms and conditions as mentioned in the earlier notification of even No. dated 18-3-2010 shall remain unchanged. The online registration done by the candidates w.r.t. the aforementioned holding notice is valid for this exam and no fresh registration is required. In other words, only the candidates who were declared eligible to appear in the exam, which was to be held on 4-7-2010 shall be eligible to appear in the exam now scheduled to be held on **04-03-2012**.

6. As per the orders dated 12-8-2011 of Hon'ble CAT, Pr. Bench, New Delhi in OA Nos.1562, 1564, 1570, 2013, 2014, 2014, 2030 & 2974 of 2010 and in accordance with this office letter No.5-2/2009-DE(Vol.III) dated 5-10-2011, all the respective Circles have intimated to all the applicants in the said OAs regarding their eligibility/ineligibility. However, the Circles may verify and intimate the list of candidates if any, who may have become eligible to appear in the exam, in view of the orders dated 12-8-2011 of Hon'ble CAT, Pr. Bench, New Delhi in the above said OAs by **06-01-2012**.

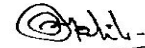
7. The eligible candidates will be able to view their filled in application forms which were submitted at the time of online registration by using the same user-id and password given by them at that time on the web-site www.internalexam.bsnl.co.in w.e.f. **04-01-2012**. It is important to note that they shall not be able to modify their application forms in any manner what so ever.

8. All the Heads of Circles are requested to intimate the (i) Centre of Examination (ii) Names and designation along with their contact details (viz. Telephone number, Fax number, Mobile number and e-mail address) of the Exam. Co-ordinators and (iii) Centre Supervisors by **10-01-2012** positively.

9. THIS NOTICE MAY PLEASE BE GIVEN WIDE PUBLICITY.

10. The receipt of this letter may please be acknowledged.

11. Hindi version will follow.



(R.S. MALIK)

ASSTT. GENL. MANAGER (DE)

Copy to:

1. Pr. GM(Pers.), BSNL CO, New Delhi
2. AGM(Pers.II)/ AGM(Rectt), BSNL CO, New Delhi
3. All recognised Unions / Associations.
4. OL Section, BSNL CO, New Delhi - for Hindi version.
5. Notice Board
6. Guard file.



(M UDAYA KUMAR)
DEPUTY MANAGER (DE-II)
Tel.:011-23766167

3/1/12

**SYLLABUS FOR LIMITED COMPETITIVE DEPARTMENTAL
EXAMINATION AGAINST 33% QUOTA
FOR PROMOTION TO SDE(T) GRADE**

Paper-I:

**Advance Technical Paper (General)
(Objective Type)**

**Maximum Marks 100
40 Marks**

SECTION –I

A. DIGITAL SWITCHING

5 Marks

- a) **Intelligent Network and Services:** Overview of Intelligent Network architecture and functions of SSP, SCP, SMP, IP etc., Various types of IN services, Access codes for various IN services etc.
- b) **Signaling Systems including CCS#7:** Various signaling systems being used in the department for local and trunk network such as E/M, R2 modified, CCS#7 etc.
- 5 Marks
- c) **ISDN:** Overview of OSI layer, ISDN introduction and services, customer premises equipment etc.
- d) **Long Distance Switching:** Overview of national switching/numbering/charging/transmission and signaling/synchronization plans.
- 5 Marks
- e) **E-10B Switching System:** Introduction to E-10B system, Description of links, connection units, time base, switching network, control units etc., Call set up procedures, OMC hardware/software, OMC restart/system regeneration/system saving, Periodic tasks, LOCAVARs, subscriber features, Exchange maintenance.
- 5 Marks
- f) **C-DOT Digital Switching System (MAX):** Overview of CDOT (MAX) Switching System, Hardware architecture, Functional description of various subsystems, Call set up procedures, Subscriber facilities, Maintenance procedures.
- 5 Marks
- g) **EWSD Switching System:** Overview of system architecture, Description of various functional units like DLU, LTG, SN, CP, MB, CCG, SYP, CCNC etc., Call Set up procedures, CCS#7, EWSD Operations, EWSD Maintenance Philosophy, Emergency Concepts.
- 5 Marks



h) **5 ESS – 2000 Switching System:** Basic characteristic & functions of 5ESS switch, Description of SM, SM2000, CM & AM, RSM, Access Interface Unit (AIU), Call set up procedures, Implementation of CCS#7 and ISDN in 5ESS, Routine maintenance.

5 Marks

i) **OCB-283 Switching System:** OCB-283 system overview, Description of various units viz. SMC, SMA, SMT, STS, SMX, SMM, token ring and CSN, Call set up procedures, OCB-283 operations, OCB-283 maintenance procedures.

5 Marks

j) **AXE-10 Switching System:-** AXE-10 system overview, Description of various subsystems viz. Central Processor Subsystem (CPS), Regional Processor Subsystem (RPS), Input-Output Group (IOG-11B), Subscriber Switching Subsystem (SSS), Group Switching Subsystem (GSS), Trunk and Signaling Subsystem (TSS), Common Channel Signaling Subsystem (CCS), SUS, TCS, CHS & OMS, Call handling, System maintenance philosophy.

SECTION –II

(40 Marks)

B TRANSMISSION AND NEW SERVICES

a) i) Optical Fibre Cables And Systems: (10 Marks)

Basic Concepts of optical communication, Optical fiber cable characteristics and Design features like multimode and single mode fibres, Dispersion, attenuation, optical fibre design (96 fibre cable), various types of optical sources and detectors, Survey and cable laying, Route index diagram, Tests and measurements on Optical Fibre Cable like OTDR, DTA, Power meter etc., Basic Concepts of PDH (2, 8, 34, 140 MB Systems), SDH (STM-1/4/16 systems), DWDM Systems.

ii) Microwave And Satellite:

Microwave Line of sight propagation, Path Loss, Frequency Band and capacities of Digital Microwave System, Hop distance, Noise Figure. Overview of Satellite Communication, History and Evolution, Frequency bands used for Satellite Communication, C and Ku bands, Geostationary satellites and satellite orbits. G/T Ratio, Antenna characteristics, VSATs, IDRs and DCME Data Rates.

b) GSM, WLL (CDMA and CorDECT) (10 Marks)

i) GSM:

Brief History of GSM, GSM Architecture containing the nodes likes BTS, BSC, MSC, VLR, HLR, and OMC etc. Cellular Concept, Radio Frequency Management, Mobile Handsets, GPRS and its Network Elements.



ii) WLL (CDMA and CorDECT)

CDMA: Multiple Access Methods, Spreading Techniques, Frequency Spectrum of CDMA, Channel Architecture of CDMA, Application of CDMA Technology in BSNL network.

CorDECT: DECT standard, DIU and CBS system capacities, Frequency band, coverage range, Internet bit rates.

C) Internet and Broadband

(10 marks)

Data communication concepts-Packet switching & Circuit Switching; OSI Layered Model; Physical layer – Physical layer Interfaces and standards-V35, V24, G703, HSSI etc. ; Datalink Layer – Datalink Layer protocol, DLC, HDLC, PPP, LAN & Ethernet Technologies; Network Layer Protocols-IP, ARP, RARP, ICMP & IGMP; IP Addressing; Transport Layer Protocols-Connection oriented and connection less protocol, TCP, UDP; Internet routing Protocols-RIP, OSPF, BGP; Internet Applications-HTTP, DNS Telnet, FTP, SMTP etc; Subscriber access Mechanisms-Modem Theory, HDSL Modems, Leased Line and Dialup Access etc. Broadband Access technologies-xDSL Technilgies, DSLAM & ADSL Modems, BRAS, Tier-I & Tier-II switch, DMT Modulation technique, PPPoE

Basics of WiFi & WiMAX

D) Computers, Computer Networks And Application Packages

(10Marks)

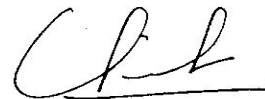
i) Computer Fundamentals: Fundamentals of Personal Computers use of Windows Operating System & Introduction to software packages like MS Word, MS Excel and MS Power Point. Use of Internet for office work like e-mail, web browsing etc. The features of Linux Operating System, Linux file system, Basic and Advanced Commands, Graphical User Interface (KDE & GNOME), Open Office.

ii) WEB Technologies: Creation of Static Web Page, which includes the designing, and developing of Static Web pages using HTML coding and FrontPage.

iii) Networking: Internet Protocols, Network Components and Architecture, IP Addressing and Sub-netting, Network Operating System, Active Directory, DHCP, DNS, Client configuration.

iv) RDBMS; RDBMS Concepts, SQL, SQL*Plus and PL/SQL.

v) BSNL Software Application: Familiarization with various departmental applications like DOTSOFT, BRMS, HR package etc.



SECTION - III

E) ACCESS NETWORKS

20 Marks

Basics of Jelly Filled Cables and fault location in copper cable network, construction and maintenance of DP and DP dressing, installation of drop-wire, pole-less external plant network, PCM principles, and overview of DLC and overview of MLLN.

Broadband access – copper based access, ADSL Technologies, DSLAM.

Earthing of Telecom Systems, Maintenance of Battery, Power Plants and UPS, Fire Protection Systems, Types, Use & Mtce. Schedule. Basic Mtce. Of EA Sets and Air-conditioning Units, Trunk IVRS.

A handwritten signature in black ink, appearing to be 'Chik', written over a horizontal line.

**SYLLABUS FOR LIMITED COMPETITIVE
DEPARTMENTAL EXAMINATION AGAINST 33%
QUOTA FOR PROMOTION TO SDE(T) GRADE**

Paper-II: Advanced Technical Paper (Special) Maximum Marks 100
(A candidate can select only one of the seven subjects i.e. A,B,C,D,E,F &G while applying for LDCE)

A. SWITCHING (100) Marks
(Subsections from 1 to 5 are compulsory)

1. Intelligent Network and Services 10 marks

Basic concepts of Intelligent Network architecture, Functions and role of SSP, SCP, SMP, IP etc., Description of various types of IN services and call flow, Access codes for various services.

2. Signaling Systems including CCS#7 10 marks

Various signaling systems being in the department for local and trunk network such as E/M, R2 modified, CCS#7 etc, Concepts of CCS-7 signaling including signaling point (SP), Signal transfer point (STP), Layered structure with reference to OSI-layer architecture, Description of MTP, ISUP, SCCP and TCAP 3, Application of No.7 signaling in PSTN, ISDN, IN and Mobile telephony.

3. ISDN 10 marks

Review of OSI layer, ISDN introduction and services, Customer premises equipment, ISDN implementation strategies etc.

4. Long Distance Switching 10 marks

Details of national switching/numbering/routing/charging/transmission and signaling/synchronization plans.

5. Earthing etc. 10 marks

Earthing of Telecom systems, Maintenance of Battery and Power Plants, Fire protection systems-types, use and maintenance schedule, basic maintenance of EA sets and air-conditioning units.

Chief

(Attempt any one of the subsection 6 to 11)

- 6) E-10 B Switching System 50 marks

Introduction to E-10B system, Description of links, connection units, time base, switching network, control units etc., Call set up procedures, OMC hardware/software, Man-machine communication, OMC restart/system regeneration/system saving, Peripheral management, Subscriber Management, Traffic administration, Trunk administration, Routing administration, Billing management, Faults & alarms management, Periodic tasks, LOCAVARs, Subscriber features, Exchange maintenance, Installation & commissioning activities, A/T procedures, Documentation, Use of various testers, Exchange service quality tests.

OR

- 7) CDOT Digital Switching System (MAX) 50 marks

System configuration & Features, Hardware architecture, installation practices, Software overview, Equipment planning, Man machine communication, Call processing, Subscriber facilities, Exchange administration, Subscriber administration, Routing administration, Trunk administration, Traffic administration, Billing administration, Patch administration, Maintenance procedures, Alarms and reports and System reconfiguration.

OR

- 8). EWSD Switching System 50 marks

Overview of system architecture, Description of various functional units like DLU, LTG, SN, CP., MB, CCG, SYP, CCNC etc., Call set up procedures, CCS#7, Application Program System Administration, Subs Administration, ISDN Administration, V5.2, Routing Charging Administration including IACHASTA, Traffic Administration, Network Administration, Physical Installation, APS Loading, Commissioning, A/T, Planning & Dimensioning, Documentation, EWSD Maintenance Philosophy, Line & Trunk Testing, Emergency Concepts, Concept of Telecom Assistance Centre, Charge Band Concept in CCS#7, Patch Implementation Procedures.

OR

- 9) 5ESS -2000 Switching System 50 marks

Basic characteristics & functions of 5ESS switch, Description of SM, SM2000, CM & AM, RSM, Access Interface Unit (AIU), Call set up procedures, Implementation of CCS#7 and ISDN in 5ESS, Documentation structure and use of Master Control Centre, Subscriber and PBX data, Human/machine interface, Reports and alarm handling, Trunk and line maintenance, Routine maintenance, System back up, ODD recent change for trunks and line, 5ESS-2000 database, Analysis of system reports, initialization and recovery, Traffic measurement reports, Installation and commissioning activities, Testing methods, A/T procedures.

Chit

OR

10). OCB-283 Switching System

50 marks

OCB-283 system overview, Description of various units viz. SMC, SMA, SMT, STS, SMX, SMM, token ring and CSN, Call set up procedures, CCS#7, OCB-283 system software, OCB-283 operations, Man-machine commands, system administration, Subscriber administration, Routing administration, Charging & Billing administration, Traffic management, Network management, Planning & dimensioning issues, Physical installation and commissioning activities, A/T procedures, OCB-283 maintenance procedures, Path implementation methods.

OR

11). AXE-10 switching System

50 marks

AXE-10 system overview, Description of various subsystems viz. Central Processor Subsystem (CPS), Regional Processor Subsystem (RPS), Input-Output Group (IOG-11B), Subscriber Switching Subsystem (SSS), Group Switching Subsystem (GSS), Trunk and Signaling Subsystem (TSS), Common Channel Signaling Subsystem (CCS), SUS, TCS, CHS & OMS, AXE-10 software organization, Call handling, Documentation, I/O handling, Planning and dimensioning, Installation and testing activities, Construction practice, Management of exchange data related to hundred groups. A-number and B-number analysis, routes, routing, Charging, destination codes, EOS codes etc., Installation test of GSS, SSS, TSS, CCS, RPS/EMS, Start up & test of IOG-11B, Start up and test of APZ 212, Initial loading of APG, User authority management (password management) Connection of ats, management of announcements, Operational quality measurement, A/T procedures, Use of testers, System maintenance philosophy, Subscriber management, Subscriber management, Maintenance of subscriber lines, trunks, hardware of SSS, GSS, RPS/EMS, IOG-11B & CPS, Handling detailed billing data, call meters, system restart, reload & back up, Command & transaction logs, traffic and service measurements.

B TRANSMISSION

100 Marks

OPTICAL FIBRE COMMUNICATION

55 marks

Basic concepts and principles of optical communication. Optical fiber cable characteristics and Design features like multimode and single mode fibers. Graded Index Fibers, Dispersion, attenuation, optical fiber design (96 fibre cable), various types of optical sources and detectors, survey and cable laying practices, route index diagram, link engineering, Tests and measurements on O.F. cable, functioning of various meters, their applications and operations like OTDR, DTA, Power meter etc.; Concepts of PHD Hierarchical MUX systems like 2, 8, 34, 140 MB systems, Basic concepts of SDH, Various types of SDH systems (STM-1/4/16 systems), SDH Multiplexing techniques, SDH Network Elements & Topology, Network Survivability, SDH Measurements faults and alarms through NMS, LCT, Element Manager, Synchronization of SDH network and measurement and synchronization, Basic concepts and advantages of DWDM systems, DWDM components like laser, detector, Transponders and Optical Amplifiers, DWDM testing-optical analyzer, A/T of OF system.



MICROWAVE:

25 marks

System design objectives, CCITT and CCIR standards, Planning and designing of multichannel microwave system, Choice of Antennas, Wave guide, Ducting, fading and fade margin, Path Loss, Multipath fading, Microwave devices, travelling wave tube(TWT) Klystron, Semiconductor, devices, engineering order wire supervisory protection switching and remote controls. Measurements of power and frequency, noise figure, group delay, Noise power and ratio measurement, standing waves ratio measurement amplitude and frequency response, Equalizers, Microwave site survey and selection, Tower Height Calculation, Critical Tower Height and Block Schematic of high capacity Microwave system. SACFA clearance, A/T of 6 Ghz and 2Ghz systems. Frequency bond and capacities of Digital UHF systems, Hop distance.

SATELLITE:

10 marks

Overview of satellite communication, History and evolution, Frequency Bands used for satellite Communication, C, Ku and Ka bands, GEO and Non-GEO satellite orbits and systems, INSAT satellite system-purpose and evolution, Space Segment Attitude and orbit control, Earth Station Configuration and parameters, Antenna Characteristics, LNA and HPA – Types and characteristics Inter-modulation products and back off, relative comparison of SSPA and TWT power amplifier, elements of Satellite link engineering, C/N and BER, Bandwidth and power considerations, Need for VSAT communication, VSAT applications – MCPC VSAT, HVNET, Intermediate Data Rate and Digital Circuit Multiplexing equipment

Miscellaneous

10 marks

Earthling of Telecom. Systems, Maintenance of Battery and Power Plants, Fire protection systems – type use and maintenance schedule, basic maintenance of EA sets and air-conditioning units, PCM principles and Digital transmission concepts.

C. GSM

100 Marks

Overview of GSM Architecture

15 marks

Brief history of development of Mobile Communication, Description of GSM Architecture Functions of various Network elements of GSM likes BTS, BSC, MSC, VLR, HLR and OMC etc. Role of IMSI, TMSI, IMEI MSRN.

Security Features in GSM:

05 marks

Security arrangements in GSM Communication Functions of A3, A5, A8 Algorithm, Ki, Ke keys, Authentication and Ciphering functions of GSM.

RF Channel Management:

10 marks

Cell layout and frequency planning, Frequency bands and specifications for GSM-900 system, Multiple Access Methods – FDMA & TDMA, Description of Air Interfaces, like logical channels and traffic Channels, Basic steps in call setup like connection request, IMSI attach and IMSI detach, Functions of Handovers and Frequency Hopping during conversation.



GPRS/EDGE/IMT-2000 10 marks
Brief description of GPRS Architecture and its Network Elements, Key Features and Objectives of IMT – 2000. Migration path from 2G to 3G, GSM to WCDMA. Future Trends in Mobile Communication.

GSM Billing concept: 10 marks
Billing concept in GSM network for pre-paid and post-paid systems. Role of Mediation of CDRs in Billing System. Brief description of various servers in Billing system. Activation of services and facilities in Subs. Mobile.

GSM Services : 10 marks
Description of GSM services like Bearer Services, Tele Services and Supplementary Services, Short Message Services(SMS), Value Aided Services (VAS) like Mobile Messaging, Mobile Internet, Mobile IN Services, configuration of mobile handset for use of value added facilities and GPRS and EDGE features.

Miscellaneous: 10 marks
Earthing of Telecom. Systems, Maintenance of Battery and Power Plants, Fire protection systems-types use and maintenance schedule, basic maintenance of EA sets and air-conditioning units.

GSM Technology; 30 marks
Functionalities, Interconnection & configuration of MSC, BSC, BTS. Abis and A link dimensioning, Engineering, Planning & Traffic Measurements. GSM Signaling Model, Um Interface, Abis interface. A interface, location, Update, Handover, Description of NSS measurement & Statistics.

D. WLL(CDMA and CorDECT) 100 Marks

Cellular Concepts, Multiple Access Techniques, Duplexing Method, Frequency Band used in CDMA, Channel list. 10 marks

Spread spectrum communications and its types, DSSS as used in CDMA cellular systems, codes used in CDMA and their functions, PN offset, Power Control, Soft hand Off, System Capacity, Rake receives, Multi-path Advantage, Processing Gain and Spreading Rates. 15 marks

IS-95 A and CDMA 2000 1 x standards and their features, System Architecture, Network elements – BTS, BSC, MSC, HHTs and FWTs PCF Functionality, Elements of Packet Switch core network – PDSN, AAA server etc. 20 marks

RF Channel Architecture of IS-95 A, Channel coding and spreading rates, Modulation Methods, Functions of each channel, call flow, HHT and FWT programming parameters, SID, NID, Channel no. etc. 15 marks

Chit

CDMA RF Planning basics, Various planning parameters – Eb/No, Ec/It FER, Frequency Reuse Factor, Sectorization Gain, Voice Activity factors, cell loading factor, cell breathing, cell capacity and coverage aspects, BTS coverage tests – VSWR Test, RF power measurement and spectrum analyzers, A/T and billing. 15 marks

Variants of CDMA – CDMA 2000 1xEVDo, WCDMA – features CDMA and GSM – brief comparison. 05 marks

CorDECT; 10 marks
Cor-DECT system architecture, various sub-systems of Cor-DECT system and their functions, DIU, CBS, BSD, RBS, FRS functions and features, Frequency spectrum for cor-DECT, no. of carriers and carriers spacing, Access Method, Frame structure, DCS, Internet Access through cor-DECT, Access procedure and available bit rates, A/T of cor-DECT system.

Miscellaneous: 10 marks
Earthing of Telecom. Systems, Maintenance of Battery, Power Plants and UPS, Fire protection systems-types use and maintenance schedule, basic maintenance of EA sets and air-conditioning units.

E. INTERNET AND BROADBAND 100 Marks

Packet Switching & Circuit Switching , OSI Model & TCP/IP Model, Physical Layer standards – V 35, V 24, G703, HSSI etc. 10 marks

Datalink layer Protocols – DLC, HDLC, PPP etc. PAP, CHAP, LANs & VLANs; Ethernet, FastEthernet and GigabitEthernet standards, CSMA-CD and switched Ethernet network, collision Domain and Broadcast Domain, Switched Ethernet Backbones. 20 marks

Network Layer Protocols- IP, ARP, RARP, ICMP, IGMP, IP Addressing, VLSM, CIDR, Routers and routed networks, IP Routing Principles, Static Routings, Default Routing and Dynamic Routing ; Dynamic Routing Protocols – RJP, OSPF, BGP etc. 20 marks

Transport Layer Protocols – TCP,UDP 05 marks
Multiprotocol Level Switching(MPLS) – MPLS Label Distribution Protocol (LDP), QoS in MPLS Networks, Traffic Engineering in MPLS Network, RSVP 10 marks

MPLS Based VPNs – Virtual Private Networks(VPNs), MPLS based Layer 3 VPNs
MPLS based Layer 2 VPNs. 10 marks

Broadband Access technologies x DSL Technologies, DSLAM & ADSL Modems, BRAS Tier I & II switch, DMT Modulation Technique, PPPoE. 10 marks

WiFi & WiMAX; 05 marks
Miscellaneous Earthing of Telecom. Systems, Maintenance of Battery, Power Plants and UPS, Fire protection systems-types use and maintenance schedule, basic maintenance of EA sets and air-conditioning units 10 marks

F. COMPUTERS, COMPUTER NETWORK AND APPLICATION PACKAGES:
100 Marks

COMPUTER FUNDAMENTALS

15 marks

Fundamentals of Personal Computers, use of Windows, Operating System, Introduction to software packages like MS word, MS Excel and MS Power point. Use of Internet for office work like e-mail, web browsing etc; features of linux operating system, Linux file system, basic and Advanced Commands, Graphical User Interface (KDE & GNOME) Open Office.

WEB TECHNOLOGIES

15 marks

Creation of Static Web Page, which includes the designing and developing of Static Web pages using HTML coding and FrontPage, Image processing tool such as Adobe Photoshop, Web-site Designing containing Dynamic Web Pages, Active Server pages (ASP), VB Script, Java script, Connectivity of the front end web applications (ASP & Java script) with the back end database applications, Hosting of Websites.

NETWORKING

25 marks

Internet Protocols, Network Components and Architecture, IP Addressing and Sub netting, Network Operating system, Active Directory, DHCP, DNS, Client configuration and User /Group Creation, Sharing of Network Resources, Disk Quota, WLAN, Proxy server, Firewall.

Network Security Issues, Various types of attacks and their counter measure, Various Security products like Firewall, Antivirus software, IDS, Vulnerability Assessments and Penetration Testing.

RDBMS;

20 marks

RDBMS Concepts, SQ, SQL*Plus and PL/SQL

Oracle Architectural Components, Maintaining an Oracle Instance, Creating a Database, Data Dictionary contents and Usage, Maintaining the Control File, Maintaining Redo Log files, Managing Tablespaces and Data Files, Storage structure and Relationships Managing Undo Data, Managing Tables, Managing Indexes, Managing Data Integrity, Managing Passwords Security and Resources, Managing Users, Managing Privileges, Managing Roles, Oracle Recovery Manager.

BSNL Software Applications

15 marks

Familiarization with various departmental applications like DOTSOFT, BRMS, HR package etc.

Miscellaneous

10 marks

Earthing of Telecom. Systems, Maintenance of Battery, Power Plants and UPS, Fire protection systems-types use and maintenance schedule, basic maintenance of EA sets and air-conditioning units



G. EXTERNAL PLANT AND ACCESS NETWORKS

100 marks

WLL – Overview of CDMA, CorDECT, installation and maintenance of FWTs and CPE.
15 marks

Mobile – Overview of GSM, GPRS and EDGE, configuration of mobile handset for use of value added facilities and GPRS and EDGE features.
15 marks

Fibre- PCM principles, Fibre laying practices, basics of SDH,ADM,SDH rings, FTTH, DLC and MLLN
15 marks

Radio freq. planning for mobile and WLL technologies , siting consideration for BTS
05 marks

Broadband access-Copper based access, ADSL technologies, DSLAM
15 marks

JF cables, construction practices for cable external plant, siting of cabinets and pillars, monsoon precautions, preventive and reactive maintenance of external plant, fault location, Pole-less networks, optimization of External plant, computerized maintenance of records.
20 marks

Measurements – OTDR, DTA set, frequency counters , NEXT/FEXT measurement, Line parameters testing, jitter, BER parameters.
05 marks

Earthing of Telecom. Systems, Maintenance of Battery, Power Plants and UPS, Fire protection systems-types use and maintenance schedule, basic maintenance of EA sets and air-conditioning units
10 marks

Chit

BHARAT SANCHAR NIGAM LIMITED
(A Govt. of India Enterprise)
Corporate Office - DEPARTMENTAL OF EXAMINATION BRANCH
Room No. 222, 2nd Floor, Eastern Court Building, Janpath, NEW DELHI - 110 001.

No. 5-2/2009-DE

Date: 18th March 2010

To
All Chief General Managers Telecom Circles, BSNL
Chief General Manager Kolkata Telephones/Chennai Telephones, BSNL
Chief General Manager, Mtce, NTR, BSNL, New Delhi

Subject:- Limited Departmental Competitive Examination for promotion to grade of Sub-Divisional Engineer (Telecom) under 33% quota to be held on **04.7.2010 (Sunday)** - arrangements for holding of.

Sir,


I am directed to state that it has been decided to hold the Limited Departmental Competitive Examination for promotion to grade of Sub-Divisional Engineer (Telecom) under 33% quota as per the provision in the Recruitment Rules of Sub-Divisional Engineer (Telecom) (No. 20-24/2001-Pers.II dated 28.2.2002) circulated vide BSNL Corporate Office Letter No. 20-1/2001-Pers.II dated 6th March 2002 and corrigendums there to issued from time to time in order to fill up the vacancies for the vacancy years 2006-2007, 2007-2008, 2008-2009 and 2009-2010.

2. (a) The examination will be conducted as per the syllabus and Scheme of examination circulated vide Pers. II Section, BSNL C.O. letter No. 2-16/2009-Pers. II dated 20.10.09 and the revised syllabus for Paper II circulated vide letter No. 2-16/2009-Pers.-II dated 5.1.2010. The details of Papers and time table of the examination will be as under:

Sl. No.	Paper No.	Subject	Maximum Marks	Day & Date	Time (IST)
1	I	Advanced Technical Paper-General (objective Type)	100	04.7.2010 (Sunday)	10.00 AM to 1.00 PM
2	II*	Advanced Technical Paper (Special) (Objective Type)	100	04.7.2010 (Sunday)	2.00 PM to 5.00 PM

(b) As per the revised syllabus circulated vide letter dated 5.1.2010, the applicant in Paper II (*) of the examination will have to opt any one of the Sections or Subsections" as listed below.

Sl. No.	Name of the Section/ Subsection	Code No. for use in on line registration
1	E-10B Switching System	12
2	CDOT Digital Switching System (MAX)	13
3	EWSD Switching System	14
4	SESS-2000 Switching System	15
5	OCB-283 Switching System	16
6	AXE-10 Switching System	17
7	Transmission	18



8	GSM	19
9	WLL (CDMA and CorDECT)	20
10	Internet and Broadband	21
11	Computers, Computer Network and Application Packages	22
12	External Plant and Access Networks	23

***Note-** If a candidate wants to appear in Switching section (subject), he will have to choose any one of the subsections (#) i.e. as listed at Sl No. 1 to 6 of the above mentioned table. In other words, if a candidate chooses any one of the subsections from 1 to 6, which are under Switching Section, he is not required to choose any of the Sections of Paper II of the examination and he will be deemed to have chosen the Switching Section. As such candidates are requested to fill up the relevant column of the application form carefully after going through the syllabus of the examination as question Paper will be supplied as per the request filled up in the application form. The option to choose the section or subsection of the Paper II is final and no request to change the option will be entertained.

(c) Officials who are eligible in accordance with the eligibility conditions as referred above and who desire to appear in the examination should submit application on-line without fail, the facility for which is available in www.internalexam.bsnl.co.in. The proforma of the application is given at Annexure 'A'. The instruction to fill up the application is given at Annexure 'B'. Applicants are requested to adhere to the instructions and register/submit their application after going through the instruction thoroughly. After submitting the application on line, the applicant must take a print out and submit the same to the controlling office after completing all formalities as given in the instruction (Annexure 'B') for onward submission to DGM(A) of the respective Recruiting Circle, otherwise he will not be allowed to appear in the examination.

(d) As already informed vide Pers. II letter dated 20.10.2009, the evaluation will be OMR based and as such each question will have multiple choices for answer. Only one answer which is the most appropriate has to be selected by the candidate and darken the relevant bubble accordingly. In case of wrong answer, 25% marks of that question will be deducted and as such the candidates are advised not to resort to arbitrary selection of answer.

3. The examination will be conducted by the Heads of Territorial Circles including NTR, Chennai and Kolkota Telephone Distts. and will be held at such Centres as may be fixed by them.

4. The eligibility for appearing in the above mentioned Limited Departmental Competitive Examination shall be as per the Recruitment Rules as per the RRs and corrigendums issued by the Pers. II Branch, BSNL C.O. The Telecom Circles in this regard may also refer the letter dated No. 15-12/2009-Pers. II dated 3.12.2009 to decide the eligibility of the applicants for the examination. However, in case of any doubt with regard to eligibility, Syllabus and the Scheme of the examination, the Circles may take up the matter suitably with the Pers.II Branch of the BSNL C.O. for necessary clarification.

5. The examination will be conducted strictly in accordance with Rules laid down in Appendix 37 of P&T Manual Volume –IV (Fifth Edition). Heads of Circles (CGM Maintenance, NTR, New Delhi for conducting the examination in Delhi) will be responsible for actual conduct of the examination in respect of the candidates permitted to appear by Heads of other Administrative Offices situated within their territorial jurisdiction. For candidates of Chennai and Kolkota Telephones, the respective Heads of Telephones Distts. will conduct the examination. Officials at present posted in the BSNL Corporate Office will submit their applications to the Circles/Organizations of their recruitment as JTOs. Permission to appear in the examination will be granted by their Circles under intimation to CGM, NTR, New Delhi. Eligible officials on deputation to other organizations either in India or abroad shall be informed of the said examination by the Circles etc. on whose strength they were working before deputation to their present organisation. The examination will be conducted in India only.



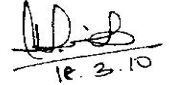
6. The starting date for on line registration of application is 05.4.2010 and the closing date is 28.4.2010. The application for examination can be registered online at the website: www.internalexam.bsnl.co.in. The print out of the application with all the due formalities as given in the instruction for filling up the application form (Annexure 'B') should be submitted within **two days** of submission on line application.

7. No electronic gadget or mobile phone will be permitted to be taken inside the examination premises by the candidates.

8. THIS LETTER MAY PLEASE BE GIVEN WIDE PUBLICITY.

9. The receipt of this letter may please be acknowledged.

Hindi version will follow.

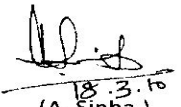


(A. Sinha)

Asstt. General Manager (DE)

Copy to:

1. GM(Pers.), BSNL C.O.
2. AGM (Pers.II), BSNL, C.O.
3. All recognised Unions/Associations
4. OL Section, BSNL CO, for Hindi version.
5. Notice Board.
6. Guard file.



(A. Sinha)

Asstt. General Manager (DE)

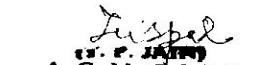
Note: 1. Online registration will be available through the website: www.internalexam.bsnl.co.in from 5.4.2010 to 28.4.2010 only.

2. Link to the website: www.internalexam.bsnl.co.in will be available w.e.f. 5.4.2010.

Endst No:- E&R/Ex-5/LDCE/SDE(T)/2010/1 Dated at 19-3-2010
AB

Copy to:-

- (1) The GMTD
AB/KRL/HSR/RTK/FBD/GRG/SPT/JD/RWR
- (2) G.M (CM-0) BSNL Haryana, Ambala
- (3) DGM (Mtce) NTR, Ambala Cantt.
- (4) AGM (Admn.) C.O. Ambala
- (5) Notice Board


(A. G. M. (E & R.))
B.S.N.L. O/o C.G.M.T.
Hr. Circle, Ambala.