कार्मिक शाखा/Personnel Branch
बीएसएनएल निगम कार्या./BSNL Corporate Office
चौथा तल, भारत संचार भवन
4th Floor, Bharat Sanchar Bhawan,
जनपथ, नई दिल्ली-10001/Janpath , New Delhi-110001.

भारत संचार निगम लिमिटेड
(भारत सरकार का उद्यम)
BHARAT SANCHAR NIGAM LIMITED
(A Govt. Of India Enterprise)

No. BSNLCO-PERS/15(17)/2/2023-PERS1(Tel)   **Dated 16 -05-2024**
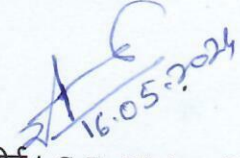
Subject: **Scheme and Syllabus for Direct Recruitment to the post of Senior Executive Trainee (DR) of Telecom Stream.**

...

The undersigned is directed to enclose herewith Scheme and Syllabus for direct recruitment to the post of Senior Executive Trainee (DR) [SET(DR)] of Telecom Stream for wide publicity. The Scheme and Syllabus shall be applicable w.e.f. the date of notification.
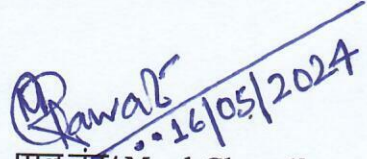
This issues with the approval of competent authority.

Encl.: As above.

[जी.पी. विश्नोई/ G.P. Vishnoi]
उप महाप्रबंधक (कार्मिक-II)
Dy. General Manager (Pers. II)

To

1. PPS to CMD, BSNL.
2. PPS to functional Directors of BSNL Board.
3. PPS to CVO, BSNL.
4. All Heads of Telecom Circles/Administrative Units, BSNL.
5. PGM(Pers)/PGM(Estt.)/GM(Rectt.), BSNL CO.
6. General Secretary, SNEA/AIGETOA/SEWA.
7. OL Section for Hindi version.
8. BSNL Intranet portal.

[मूल चंद/ Mool Chand]
सहायक महाप्रबंधक (कार्मिक नीति)
Assistant General Manager (Pers. Policy)

पंजी. और निगमित कार्यालय: भारत संचार भवन, एच.सी. माथुर लेन, जनपथ, नई दिल्ली-110 001
Regd. & Corporate Office: Bharat Sanchar Bhawan, H.C.Mathur Lane, Janpath, New Delhi – 110001 www.bsnl.co.in

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Scheme and Syllabus for Direct Recruitment to the post of Senior Executive Trainee [SET (DR)] of Telecom Stream

1. Scheme of Examination:

The examination (Computer based-Multiple choice-Objective type test) will consist of one paper as given below:

Paper	Particulars	Maximum Marks	Duration
Part-I (Common)	Written Test (Aptitude)	40 Marks (40 Questions)	180 Minutes
Part-II (Core)	Written Test (Technical)	160 Marks (160 Questions)	
	Total	200 Marks (200 Questions)	

Note:

(a) The examination will be conducted in one shift comprising of Part-I (Common)-Written Test (Aptitude) and Part-II (Core) - Written Test (Technical) for 180 Minutes duration.

(b) The examination will be objective type with negative marking. For each correct answer 01 Mark will be awarded and for each wrong answer (-)0.25 Marks will be awarded.

1.1 Minimum qualifying Marks:
Minimum qualifying marks in Part-I (Common) & Part-II (Core) shall be 40% in each part and overall minimum qualifying Marks in both Part-I & Part-II combined shall be 50%. For SC/ST, OBC, PwBD and EWS candidates, there shall be relaxation in Qualifying Marks and the minimum Qualifying Marks in each Part shall be 35% and overall minimum Qualifying Marks in both the Parts combined shall be 45%.

1.2 Determination of Final Merit List:
Final merit list will be prepared based on Total Marks obtained in Part-I (Common) & Part-II (Core) provided the candidate has secured minimum qualifying Marks as prescribed above.

2. Syllabus for Part-I (Common) – Written Test (Aptitude)

(40 marks)

Part-I (Common)	Aptitude Test	1. Quantitative ability and data sufficiency 2. Reasoning (e.g. analytical, logical and critical reasoning) 3. Verbal ability, reading comprehension and analysis

3. Syllabus for Part-II (Core) – Written Test (Technical) - Telecom Stream:

As given in Annexure.

16.05.2024

Syllabus of SET(DR) for Written Test- Technical Core-Telecom Stream

(160 Marks)

Sl. No.	Topic	Topic Sub-heading	Weightage in %
1	Basic Telecommunications Concepts	• Signal Processing • Modulation and Demodulation Techniques • Multiplexing techniques • Spectrum Management	15
2	Wireless Telecommunication Technologies	• Wireless Communication principles • Mobile Antenna System (Basics, Azimuth, Tilt, VSWR) • Fundamentals of GSM (2G/3G) • Fundamentals of LTE • Fundamentals of IP Multimedia Subsystem(IMS) • Fundamentals of 5G & Industrial applications (5G Use Cases & captive Network etc.) • KPIs of 2G/3G/4G & 5G mobile network for voice & data quality • Satellite Communications (LEO, MEO) • Fundamentals of Telco-Cloud • Mobile Radio Back Haul (M/W, UBR, E-Band etc.) • Spectrum Management • Fixed Wireless Access • Fundamentals of USIM/ESIM/ISIM and Network access security • Fundamentals of Network Management System (NMS) • Standardization in wireless communication • Fundamental of Signaling (SS7, SIGTRAN) & various protocols (SIP, Megaco, H.248, MGCP,RTP,RTCP etc.) • Disaster management & mitigation through ICT.	15
3	Wireline Telecommunication Technologies	• NGN Switches, Soft Switches • Telecommunication Call Routing and Switching concepts • Broadband Internet Technologies. • FTTxTechnology • Signaling in PSTN and SSTP • C4 & C5 NGN Architecture and Call flow	15

		• NGN PROTOCOLS (SIP/ H.248/RTP/SIGTRAN) • IMS Network Architecture • ISDN (PRI/BRI), EPABX, SIP SERVICES • WI-FI Services and Encrypted HOTSPOT, Enterprises HOTSPOT Solution	
4	Telecom Transmission Infrastructure	• Fundamentals of Transmission Systems • Optical Fiber Technology • Optical Fiber Systems (DWDM,OTN, FTTH, GPON, EPON)	15
5	IP/Data Networks	• Network Elements • Routing Concept And Protocols • OSI and TCP/IP Model • Caching & Peering • Secured IP network • Fundamental concept of IPv4 Addressing , sub netting, super netting • IPv6 Addressing: Scheme, type of IPv6 Addresses, IPv6 Routing, Tunneling. • Fundamentals of MPLS • Network Design for Next Generation IP Cloud Network. • IP Network QoS. • Proxy Services, DNS Services • Cyber Security and Firewall	15

6	Emerging Technologies	• Fundamentals of
		  ○ Internet of Things (IoT) & M2M
		  ○ Block chain
		  ○ Software Defined Networks
		  ○ Cloud Computing and Data Centers
		  ○ Artificial Intelligence and Telecom Network
			15

7	Project Management	• Introduction to project management and project selection, • Project planning and implementation. • Project Management Tools- Bar Chart, Gantt Chart, PERT, CPM	10

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16.5.2024