



भारत संचार निगम लिमिटेड  
भारत सरकार का उद्यम)  
कार्मिक शाखा, निगम कार्यालय  
चौथा तल, भारत संचार भवन,  
जनपथ, नई दिल्ली

No. BSNLCO-PERS/15(12)/1/2022-PERS1

Dated 16-05-2023

To

All Heads of Telecom Circles/Administrative Units,  
BSNL

Subject: **Scheme and Syllabus of LICE for promotion from SDE to AGM of Telecom Operations Stream.**

The undersigned is directed to enclose herewith the Scheme and Syllabus of LICE for promotion from SDE to AGM level of Telecom Operations Stream for wide publicity among the executives of BSNL.

Encl: As above

*21/16.5.2023*  
(जी.पी. विशनोई/ G.P. VISHNOI)  
उप महाप्रबंधक (कार्मिक-डीपीसी-एसएम)  
Dy. General Manager (Pers-DPC-SM)

Copy to:

1. PPS to CMD, BSNL.
2. PPS to functional Directors of BSNL Board.
3. PPS to CVO, BSNL.
4. All CGMs/PGMs/Sr.GMs/GMs, BSNL CO.
5. All Heads of cadre controlling authorities.
6. General Secretary, AIGETOA/SNEA/SEWA.
7. OL Section for Hindi version.
8. BSNL Intranet portal.

*M. Rawal*  
(मूल चंद/Mool Chand)  
सहायक महाप्रबंधक (कार्मिक नीति)  
Assistant General Manager (Pers. Policy)

**Scheme and syllabus of the Limited Internal Competitive Examination (LICE) for promotion to the grade of Assistant General Manager (AGM/DE) of Telecom Stream**

**1. Scheme of Examination**

**1.1. The examination (Computer Based Test – objective type) will consist of two papers as given below:**

<b>Paper</b>	<b>Particulars</b>	<b>Maximum Marks</b>	<b>Duration</b>
<b>Written Test (Technical)</b>	(i) Core	50 marks (50 Questions)	150 Minutes
	(ii) Common	50 marks (50 Questions)	
<b>Total</b>	<b>100 marks</b>		
<b>Aptitude Test</b>	One Section	50 marks (50 Questions)	60 Minutes

Note:

- The examination will be conducted in one shift comprising Written test (Technical) for 150 minutes and Aptitude Test for 60 minutes.
- 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.
- Minimum qualifying marks in Written Test (Technical) and Aptitude Test put together shall be 40% for OC and 35% for SC/ST and PwBDs if sufficient PwBD candidates are not available on prescribed standards i.e. out of total 150 marks, OC candidate has to obtain minimum 60 marks and SC/ST & PwBD candidates have to obtain minimum 52.50 marks to qualify the examination.
- Evaluation of APARs shall be done only in respect of candidates obtaining minimum qualifying marks in Written Test (Technical) and Aptitude Test put together.
- Reservation in promotion to PwBD category candidates shall be available as per latest DoPT guidelines.

**1.2 Evaluation of APARs**

- For assessment of APARs and calculating APAR score (No. of years of reckoning APARs and procedure to be followed for incomplete APAR will be as followed in DPC for seniority quota promotion) in respect of executives qualified in written examination, the composition of Assessment Committee will consist of following officers:

PGM/GM (Rectt)	- Chairman
PGM/GM of concerned Cadre	- Member
CLO(SCT)/DGM(SCT)	- Member
DGM(Rectt.)	- Member/Convener
Approving Authority	- Director(HR),BSNL Board

- The Assessment Committee will assess the APARs in respect of adverse remarks, integrity and score in each of the reckoning APARs. In reckoning APARs, numeric score below 04 in any APAR being considered and/or the adverse remarks and/or doubtful integrity in any of the APARs will render the

- executive unsuccessful for promotion in that particular LICE, provided that final decision in the matter has been taken by the Competent Authority
- (iii) Where adverse remarks in APAR have already been communicated but the decision of Appellate Authority on the appeal is pending, the result of such executives will be deferred until final decision on the appeal is taken by the competent authority.
- (iv) While considering the deferred case as above, if the committee finds that adverse remarks are toned down or expunged, it would place him at the appropriate place in the relevant merit list of qualified executives.
- (v) Matter being confidential, Recruitment branch shall be the coordinating Branch for Assessment Committee and cases of incomplete APAR/Adverse remarks/doubtful integrity cases will be dealt by them in coordination with concerned Circle/Cadre authorities, if required.

**1.3 Determination of final merit list** (Weightage- Written Test 60%, Aptitude Test 20% & APAR 20%):

Score A = 0.6 * Candidate marks in Written Test
Score B = 0.2 * Candidate marks in Aptitude Test * 2
Score C = 0.2 * Candidate average APAR score * 10
Total Score = Score A + Score B + Score C
Final merit list shall be published based on Total Score as per vacancies published for that particular LICE subject to obtaining minimum overall qualifying marks in Total Score.
Qualifying Marks in total score: OC-50%; SC/ST-45% and PwBD-45% if sufficient PwBD candidates are not available on prescribed standards.

**2. Syllabus:**

**2.1 Syllabus for Written Test Technical (Core) – Telecom:**

Sl. No	Topic	Topic sub-heading	Weightage (in %)
1	WIRELESS BUSINESS	<ul style="list-style-type: none"> <li>• MOBILE ANTENNA SYSTEM (ANTENNA BASICS, AZIMUTH, TILT, VSWR)</li> <li>• CELLULAR CONCEPT (CELL CONCEPT, SITE, SECTOR AND CLUSTER)</li> <li>• FUNDAMENTALS OF GSM (FREQUENCY BAND, GSM SPECIFICATION)</li> <li>• BACKHAUL MEDIA FOR MOBILE RADIO NETWORK</li> <li>• OVERVIEW OF WCDMA</li> <li>• UMTS (3G), HSPA AND HSPA+</li> <li>• RF PLANNING AND DRIVE TEST TOOLS(2G/3G/4G &amp; 5G)</li> <li>• PLANNING AND OPTIMIZATION OF 2G/3G/4G &amp; 5G RADIO NETWORK</li> <li>• TRAFFIC REPORT ANALYSIS</li> <li>• KPIs OF 2G/3G/4G &amp; 5G AND CNMC PORTAL OVERVIEW, MOBILE NOC</li> <li>• OVERVIEW OF 4G LTE</li> <li>• 4G RADIO ACCESS NETWORK</li> <li>• PCI PLANNING</li> <li>• LTE ARCHITECTURE AND LTE CALL FLOW</li> </ul>	25

*MD Samal*  
..16/05/2023

		<ul style="list-style-type: none"> <li>• LTE AIR INTERFACE</li> <li>• IMS AND VOICE OVER LTE(VOLTE)</li> <li>• LTE-A AND MIMO</li> <li>• INTRODUCTION TO 5G</li> <li>• VOICE OVER NEW RADIO (VoNR)</li> <li>• SPECTRUM MANAGEMENT AND PLANNING</li> <li>• INTRODUCTION TO SALIENT FEATURES OF 3GPP RELEASE UPTO RELEASE 17</li> <li>• SECURITY FEATURES OF 2G/3G/4G &amp; 5G MOBILE NETWORK</li> <li>• INTRODUCTION TO USIM / ESIM / UICC / ISIM / 5G SIM</li> <li>• ENTERPRISE MOBILE SERVICES BROADBAND AND VPN</li> </ul>	
2	WIRELINE BUSINESS	<ul style="list-style-type: none"> <li>• FTTH TECHNOLOGY/FTTH BROADBAND</li> <li>• MLLN</li> <li>• SIGNALING IN PSTN</li> <li>• NGN ARCHITECTURE</li> <li>• NGN PROTOCOLS (SIP/H.248/RTP/SIGTRAN)</li> <li>• CDOT MAX NG</li> <li>• C5 NGN LMG ARCHITECTURE</li> <li>• SSTP IMPLEMENTATION IN BSNL</li> <li>• IMS NETWORK ARCHITECTURE</li> <li>• PARTNER MANAGEMENT, (TIP &amp; SYSTEM INTEGRATOR)</li> <li>• ISDN (PRI/BRI), CENTREX, EPBAX, SIP SERVICES</li> <li>• WI-FI SERVICES AND ENCRYPTED HOTSPOT, ENTERPRISES HOTSPOT SOLUTION</li> <li>• DSL TECHNOLOGY</li> </ul>	25
3	CORE NETWORK BUSINESS	<ul style="list-style-type: none"> <li>• <b>OPTICAL FIBRE NETWORK</b> CONCEPT OF OPTICAL FIBER COMMUNICATION OFC LAYING AND INSTALLATION PRACTICES OPTICAL FIBER SPLICING FAULT LOCALIZATION OF OFC NETWORK USING OTDR, POWER METER, RTFMS AND ETHERNET ANALYSER ETC. ADSS CABLE</li> <li>• <b>TRANSPORT NETWORK ARCHITECTURE</b> SDH AND NGSDH DWDM TECHNOLOGY-AN OVERVIEW CPAN/MANN AND OTN TECHNOLOGY OVERVIEW TERRESTRIAL RADIO LINKS VIZ. MICROWAVE, RF LINK FSO&amp;LiFi COMMUNICATION</li> <li>• <b>SATELLITE COMMUNICATION TECHNOLOGY</b> VSAT, DSPT AND INMARSAT</li> <li>• TRANSMISSION MEDIA EQUIPMENT PLANNING AND INSTALLATION</li> </ul>	20
4	DATA NETWORK AND MISC.	<ul style="list-style-type: none"> <li>• OSI AND TCP/IP</li> <li>• IP ADDRESSING, SUBNETTING AND SUPERNETTING</li> <li>• IPv6</li> <li>• NETWORK ELEMENTS</li> <li>• ROUTING CONCEPT</li> </ul>	15

		<ul style="list-style-type: none"> <li>• ROUTING PROTOCOLS</li> <li>• PROXY SERVICES</li> <li>• DNS SERVICES</li> <li>• CYBER SECURITY AND FIREWALL</li> <li>• MULTIPLAY BROADBAND OVERVIEW</li> <li>• MULTIPLAY BROADBAND ELEMENTS AND FUNCTIONS</li> <li>• NEW TRENDS IN IT – BIG DATA, CLOUD COMPUTING, AI</li> <li>• LATEST TRENDS IN WEB TECHNOLOGIES</li> </ul>	
5	ENTERPRISE BUSINESS (EB)	<ul style="list-style-type: none"> <li>• EB IN BSNL, FORMATION OF EB, EB STRUCTURE IN CORPORATE OFFICE /CIRCLE OFFICE/ BA LEVEL</li> <li>• ENTERPRISE BUSINESS MARKETING AND STRATEGY</li> <li>• SALES PROCESS &amp; SALES REVIEW</li> <li>• SERVICE DELIVERY AND SERVICE ASSURANCE INCLUDING SLA</li> <li>• SYSTEM INTEGRATOR POLICY (CPNE) &amp; CPP</li> <li>• EB PORTAL OVERVIEW</li> <li>• MPLS VPN AND SDN CONCEPTS</li> <li>• IDC SERVICES INCLUDING CO-LOCATION, CLOUD AND HOSTING</li> <li>• IOT, M2M, BULK PUSH SMS, NB IOT AND SaaS SERVICES</li> </ul>	15

## 2.2 Syllabus for Written Test Technical (Common):

1	IT Tools	<ul style="list-style-type: none"> <li>• MS office: Word, Excel, Power Point</li> <li>• E office: Configuration, Usage and Reports</li> <li>• ESS workflows</li> </ul>
2	Planning & Operation	<ul style="list-style-type: none"> <li>• ERP processes</li> <li>• IPMS</li> <li>• GeM, CPP, MSTC</li> <li>• BSNL CDA Rules</li> <li>• Energy Conservation OORJA APP (Project OJAS)</li> <li>• Procurement Manual</li> </ul>
3	General Admn.	<ul style="list-style-type: none"> <li>• RTI, PGRMS, Grievance Redressal Mechanism</li> <li>• Contract Management</li> </ul>
4	Spectrum & Licensing	<ul style="list-style-type: none"> <li>• Types of Telecom License</li> <li>• USO Framework</li> </ul>
5	TRAI regulations	<ul style="list-style-type: none"> <li>• TRAI QoS</li> </ul>
6	Project Management	<ul style="list-style-type: none"> <li>• Project evaluation (Payback / NPV/Rol)</li> <li>• Project Budgeting and RE/BE</li> <li>• Project monitoring (CPM/PERT)</li> <li>• Capitalisation, WIP, Depreciation and Scrapping</li> </ul>

## 2.3 Syllabus for Aptitude Test:

Topic	Sub-heading
General Aptitude	<ul style="list-style-type: none"> <li>• Quantitative Aptitude</li> <li>• Reading Comprehension</li> <li>• Reasoning Ability</li> </ul>