Detailed Technical Specifications

SPECIFICATIONS OF IT EQUIPMENT For FY 24-25		
#	**Item/Description**	**Bundle Unit/Qty**
	COMPUTER & LAPTOPS (LOT 01)	
1.1	**Computers (HP, DELL, LENOVO or Equivalent)**	
	Form factor — Mini PC attachable with display screen	
	Processor — Intel Core i7 13th/14th generation processor or better	
	Memory — 2 x 8 GB minimum	
	Storage — At least 512GB NVMe or better	
	Graphics — Integrated: Built-in Graphics	
	I/O Port — 1 x headset connector; 2 x USB Type-A; 1 x USB Type-C, 1 power connector; 1 x RJ-45; 3 x USB Type-A; 2 x DisplayPort 1.4; 1 x HDMI	
	Wireless — Wi-Fi 6 and Bluetooth 5.3 wireless card	
	Expansion slots — 1 x M.2 slot for WLAN and 2 x M.2 2280 slots for storage.	
	Keyboard, Mouse — USB keyboard and mouse	
	Power — Power adapter, 80% efficiency or better	
	Display — **1 x 24" Display Monitor** Ports: 1 x DisplayPort 1.4 Cables: DisplayPort cable, AC power cord Panel technology: IPS Response time: 5ms or lower Flicker-free: Yes Aspect ratio: 16:9 Screen treatment: Anti-glare Resolutions: upto 2560 x 1400 Display features: On-screen controls, Anti-glare, Height Adjust/Tilt/Swivel/Pivot VESA mounting: Bracket included Low blue light: Yes Bezel: 4-sided micro-edge	**100**
	Operating system — Windows 11 Pro Pre-Installed by OEM	
	Warranty — 3 Years NDB local	
1.3	Kaspersky Anti-Virus End point detection Standard (5 Years validity)	**135**

1.2	**Laptops (Dell/HP or Equivalent)**		
	Processor	13th/14th Gen Intel Core i7 or above	
	RAM	At least 16 GB	
	Graphics	Integrated Graphics	
	Display	14" Touchscreen	
	SSD/HDD	Minimum 1TB SSD	
	Webcam	Yes	
	Sound	Dual stereo speakers, dual microphones with noise reduction	35
	Keyboard	Spill resistant backlit keyboard	
	Pointing Device	Click pad with multi touch	
	Wireless	Intel Wi-Fi 6E AX211 (2x2), Bluetooth 5.3	
	Battery	3 cell – Long life or better	
	OS	Windows 11 Pro Pre-Installed by OEM	
	Bag	Good quality executive carrying bag	
	Warranty	3 Years NDB local	

WORKSTATIONS FOR PROGRAMMING AND AI DEVELOPMENT (LOT 02)

2.1	**Workstations Computers (HP, DELL, LENOVO or Equivalent)**		
	Form factor	Tower, Tool-less Access with Dust Filter	
	Processor	Intel Core i7 14-14700 processor or better	
	Memory	2x 16 GB/ 1 x 32GB DDR5 5600 MT/s ECC dual-channel or better	
	Storage	1 x 1TB M.2 NVMe class 40, 1x 2TB HDD 7200RPM	
	Graphics	Integrated: Intel UHD Graphics 770 Discrete: GPU Memory: 8 GB GDDR6, Memory Interface: 128-bit, Memory Bandwidth: Up to 160 GB/s, GPU Cores: 896 or better, Single-Precision Performance: Up to 2.5 TFLOPs, System Interface: PCI Express 3.0 x 16, Max Power Consumption: 50 W, Thermal Solution: Active, Display Connectors: 4 x mDP 1.4 with latching mechanism, Max Simultaneous Displays: 4x 3840 x 2160 @ 120Hz, 4x 5120 x 2880 @ 60Hz, 2x 7680 x 4320 @ 60Hz	04
	I/O Port	Front: 1 USB Type-C 20Gbps, 2 USB Type-A 10Gbps, 1 universal audio jack Rear: 2 DisplayPort 1.4, 3 USB Type-A 10Gbps, 1 RJ-45. 1 audio port, 1 power-adapter port	

Ports	2 USB 3.2 Gen 1 Type-A/Type-C
Wireless	Intel Wi-Fi 7 and Bluetooth 5.4 wireless card, vPro
Expansion slots	1 x M.2 2230 (WLAN), 2 PCIe x8, 2 PCIe x16, 2 x M.2 2280 (Storage slot)
Keyboard, Mouse	Mechanical USB keyboard and mouse
Power	550 W 92% efficient, wide-ranging, active PFC or better
Display	2 x 24" Display Monitors Resolution: QHD (2560 x 1440 @ 90 Hz) Ports: 1 DisplayPort 1.4, HDMI, USB Cables: DisplayPort to mDP cable, HDMI cable, USB Type-A to B cable, AC power cord Panel technology: IPS Response time: 5ms or lower Flicker-free: Yes Aspect ratio: 16:9 Screen treatment: Anti-glare Resolutions: upto 2560 x 1400 Display features: On-screen controls, Anti-glare, Height Adjust/Tilt/Swivel/Pivot VESA mounting: Bracket included Low blue light: Yes Bezel: 4-sided micro-edge Pixels per inch (ppi): 123 ppi or better Panel bit depth: 10 bit (8 bit + FRC) Backlight type: Edge-lit Display colors: 99% sRGB, 90% DCI-P3, and 99% BT.709, Up to 1.07 billion colors supported
OS	Windows 11 Pro Pre-Installed by OEM
Warranty	OEM 3-Years local NBD repair or replace

PRINTERS (LOT 03)

3.1	Network Printer (Heavy Duty) (HP/Cannon/Xerox or Equivalent)	

Print Speed	61 to 65 ppm (Black)	
Resolution	Up to 1200 x 1200 dpi	
Print Technology	Laser	
Display	LCD Color Graphics Display	**16**
Processor speed	800 MHz or better	
Paper trays	At least 2 or Above	
Connectivity	1 x USB; 1 x 1GbE network	

	Processor/Memory/ Hard Drive	Quad Core 1.2GHz /2 GB system memory/32GB eMMC	
	Media sizes	Letter, legal, executive, A4, envelopes	
	Duplex printing and duty cycle	Automatic Duplexer with Up to 300,000 pages monthly	
	Compatible operating systems	Windows 7 onwards, Mac OS X onwards, Linux	
	Wireless capability	Optional	
	Cable included	1 x USB	
	Warranty	Standard	
3.2	**Printers (Xerox/HP/Cannon or Equivalent)**		**13**
	Print Speed	Up to 40 ppm (Black)	
	Resolution	Up to 1200 x 1200 dpi	
	Display	2-line back lit LCD graphic display	
	Print quality black (normal)	Normal (Native: 600 x 600 dpi, enhanced up to 4800 x 600 dpi)	
	Print quality black (best)	Fine Lines (1200 x 1200 dpi)	
	Connectivity, standard	1 Hi-Speed USB 2.0; 1 host USB at rear side; Gigabit Ethernet 10/100/1000BASE-T network; 802.3az(EEE)	
	Memory	256 MB	
	Input capacity	Up to 350 sheets (Tray 1: up to 100 sheets; Tray 2: up to 250 sheets)	
	Output capacity	Up to 150 sheets	
	Duplex printing	Automatic Duplexer	
	Compatible operating systems	Windows 7 onwards, Mac OS X 10.6 onwards, Linux	
	Wireless capability	Optional	
	SCANNERS & COLOR PRINTER (LOT 4)		
4.1	**Scanners (Xerox/HP/Cannon or Equivalent)**		**04**
	Capacity: 60 sheets or more		
	Speed : Minimum 25ppm		
	USB : Yes		
	Document feeder : Yes		
	Minimum DPI: 600x 600		
	Warranty: 2 years		
	Minimum Document size: 8.5 x 122 in		
	Capacity: 60 sheets or more		
	Speed : Minimum 25ppm		
	Warranty: Standard		
4.2	**Color Scanner (Xerox/HP/Cannon or Equivalent)Printer**		**01**
	Device Category: All in One Multifunction		

	Printer Technology: Inkjet		
	Output Type: Color		
	Functions: Print, Scan, Copy		
	Max Print Speed (Mono) : 33 pages/min Monochrome, 15 pages/min Colour,		
	Connectivity :USB, WiFi, Wi-Fi Direct		
	Warranty: Standard		

LED TV (LOT 05)

5.1	**LED TV (Server Room)**		01
	65″ Screen Size 4k UHD		
	Google TV (Youtube, Internet Browsing etc) Yes		
	Display Type: DLED		
	Display Resolution: 3840x2160		
	UHD Support: Yes		
	HDR: HDR10+ / Dolby Vision		
	High Color Gamut: 93% DCI-P3		
	Brightness (cd/m2): 320nit		
	Contrast Ratio: 5000:1		
	Colors: 1.07G (8 bit + FRC)		
	Refresh Rate: 60Hz/120Hz DLG		
	Dynamic Contrast: Yes		
	Backlight Adjustable: Yes (0~100)		
	Connectivity: 2.4GHz/5GHz dual-band Wi-Fi 802.11 b/g/a/n/ac 2T2R		
	RAM/ROM: 2GBDDR4 +16GB Flash		
	Input: HDMI, USB		
	Audio Input: Yes		
	Wall mounting arm: Yes		
	Installation/Commissioning: Included (Vendor must include any/all accessories with labor)		
	Standard warranty		
5.2.	**LED TV (for live meetings with stakeholders)**		04
	Screen Size: 50"		
	Resolution : 3840x2160 minimum		
	Led Type : 4K UHD Google TV		
	Google TV (Youtube, Internet Browsing etc) Yes		
	Bluetooth : Yes		
	WiFi (Wireless Fidelity) : Yes		
	Android : Yes		
	DVI : Yes		
	Input: HDMI, USB		

	Audio Input: Yes		
	Connectivity: 2.4GHz/5GHz dual-band Wi-Fi 802.11 b/g/a/n/ac 2T2R		
	Wall mounting Arm: Yes		
	Installation/Commissioning: Included (Vendor must include any/all accessories with labor)		
	Standard warranty		

MULTIMEDIA SCREEN AND PROJECTOR (LOT 06)

6.1	**Convertible touch screens with accessories**	**22**
	Touchscreen Convertible	
	12th-13th Gen Core i5/AMD Ryzen 7 Processor Minimum 2.1 Ghz	
	Minimum 16GB RAM	
	512 GB NVMe SSD	
	Colour: Silver or White	
	Screen: 14" WUXGA,	
	Touch: 10-point Multi-touch	
	Wi-Fi® 6, 802.11ax 2x2	
	1 HDMI 1.4b	
	FHD 1080p with Privacy Shutter	
	Bluetooth: BT5.2	
	Stylus/Pen Included	
6.2	**Projector**	
	Lamp mode: Standard Time: 4000 H minimum to replace	
	Screen size: 40" to 300" (1.02 m to 7.62 m) minimum	
	HDMI input: Yes 3 ports	
	Remote: Yes	
	Scan Resolution (optical): up to 1200 dpi minimum	
	LAN:RJ-45,10BASE-T/100BASE-TX	**01**
	USB: Type-A & Type-B	
	MICROPHONE IN: Microphone input: Mini Jack	
	Resolution: WUXGA (1920 x 1200)	
	Lumens: 3500 minimum	
	Warranty: 2 years	
	Installation/Commissioning: Included (Vendor must include any/all accessories with labor)	

UPS (LOT 07)

7.1	**40KVA UPS Pure Sinewave**	
	Schneider /APC/Emersion or Equivalent	

	Configurable Power: 40.0kVA	
	Input Power Factor: 0.9 or better	
	Output Voltage: Configurable for 380/400/415 V 3 Phase nominal output voltage	
	Output Voltage Distortion: Less than 5 % at full load	
	Topology: Double conversion online	
	Waveform type: Sine wave	
	Bypass: Built-in maintenance bypass, Built-in static bypass	
	Battery type: VRLA	01
	Battery Modules: included	
	Expected Battery Life (years): 1 Year or better	
	Backup Time: At least 10-15 minutes on full load	
	Interface Port(s): TCP/IP, Network Card	
	Management/Reporting: Pre-Installed Management/Reporting Card with any/all perpetual licenses/software's/cables	
	Installation/Commissioning: Included (Vendor must include any/all accessories with labor)	
	Warranty: OEM local NDB 1-year repair/replace	
7.2	**30 KVA UPS Pure Sinewave**	02
	Schneider /APC/Emersion or Equivalent	
	Configurable Power:30.0kVA	
	Input Power Factor: 0.9 or better	
	Output Voltage: Configurable for 380/400/415 V 3 Phase nominal output voltage	
	Output Voltage Distortion: Less than 5 % at full load	
	Waveform type: Sine wave	
	Bypass: Built-in maintenance bypass, Built-in static bypass	
	Battery Modules: included	
	Expected Battery Life (years): 1 Year or better	
	Backup Time: At least 10-15 minutes on full load	

	Installation/Commissioning: Included (Vendor must include any/all accessories with labor)	
	Warranty: OEM local NDB 1-year repair/replace	
	DATA CENTER AND UPGRADATION OF EXISTING HARDWARE (LOT 08)	
8.1	**SERVER HARDWARE: Dell/HP/IBM or Equivalent Rack Mount Server**	**05**
	2 x CPU, 2.5" front Chassis with front standard bezel, 16 bay SAS or more	
	Intel® Xeon® or equivalent Scalable Processors 2.10 GHz Base Frequency or better, 32 Core or better	
	ECC 8x64 GB RDIMM, 5600MHz, Dual Rank or above	
	RAID controller 8GB Cache and support for RAID Level 0, 1, 5, 6, 10, 50, 60	
	OEM Validated 1.92TBx4 SSD SAS up to 24Gbps 512e Hot-plug	
	OEM Validated, Digital Signed 2.4TBx8 SAS 512e 12Gbps 2.5in Hot-plug Hard Drive	
	Dual Port 1GbE LOM	
	Quad Port / 2 x Dual Port 10G SFP+ Network Card with 10G SFP+ including 4x MM LC Duplex transceiver module	
	Dual Port 32GB Fiber Channel HBA with SFP28 32 SFP	
	Redundant Hot-plug, Power Supply (1+1) 1400W or above	
	Rack mounting rails with cable management arm 2U	
	Keyboard, Mouse from same brand/solution	
	PCIe Generation: PCIe Gen 4/ PCIe Gen 5 complaint with RAM and Processor	
	Security Cryptographically signed firmware Secure Boot Trusted Platform Module 2.0 v3	
	Enterprise level management including applicable integration APIs and Tools. Vendor must quote any / all applicable Licenses Existing platform: Dell PowerEdge R740, R740xd, R760	**Solution**
	OEM 3-Years local NBD Repair/Replace Warranty and support	-
8.2	**SAN HARDWARE: Dell/Huawei/NetApp or Equivalent**	**02**
	Intel based or equivalent processor with support for third-party hardware compatibility, third-party storage compatibility, third-party vulnerability assessments, third-party opensource storage management support without any additional licensing requirement.	
	2.4" Disk Array Enclosure	
	NVMe/SSD based, 100TB usable with RAID 6	

	Must Support FC and iSCSI on single SAN	
	4 x 32GB FC with SFPs(Fully loaded) per controller	
	4 x 10GB SPF+ with SFPs(Fully loaded) per controller	
	Initiators per Array: At least 2048 or better	
	Rack mounting and installation kits	
	Dual AC power supply	
	Data Reduction Technologies**:** Must support inline Compression and De-duplication. All licenses must be perpetual.	
	Data Protection & Replication Software**:** Must include Synchronous Replication, Asynchronous Replication, Snapshots, Auto Failover and Failback software for full quoted capacity. All licenses must be perpetual	
	Protocols: Must have support for File, Block, Object(Optional)	
	Features: End-to-end Unified all flash and scale-out architecture that supports FC, iSCSI, NFS, CIFS, VMware Virtual Volumes (VVols), S3 protocols (Optional). All supported protocols must be served without an external appliance and license. Support for all known operating system platforms such as Windows, Linux etc. Support for virtualized server environment like VMWARE etc. Should support Two Site Synchronous(active/active) and Asynchronous replication. All supported protocols must be served without an external appliance and license. Support for snapshot and thin provisioning. All supported protocols must be served without an external appliance and license. Must support at least double disk failure protection. All supported protocols and features must be served without any additional appliance / license which should be valid till the warranty period.	
	Reporting: Dedicated Storage management software Customized reports, real time monitoring Historical performance data for analysis and trending. Capacity utilization monitoring and SSD/HDD service life monitoring (monitors the lifespan and displays the wear level and estimated remaining service life of each SSD/HDD) Real-time dashboards SNMP, Syslog (CIFS and NFS) and Email Logging/Monitoring Administrative Controls with full RBAC	
	OEM 3-Years local NBD Warranty and support Onsite Configuration and Installation OEM based training for 03 technical resources	
8.3	**SAN Switch 32Gb 24port including cables and allied accessories**	**2**

	Port speed: 32Gb Ports: 16-ports active (fully loaded) Aggregate switch bandwidth: 768 Gbps or better Protocol supported: Fiber Channel Updates/Patches: Allow software updates/patches without downtime. Features: QoS, Centralized Management, Active-Active, Active-Passive Storage replication supported Availability features: Hot code load ports on-demand with no downtime Media types Supports: 32Gb and 16Gb transceivers Upgradability: Activate additional ports using Port-On-Demand upgrades License: All applicable perpetual licenses	
	Warranty: OEM 3-Years local NBD repair or replace warranty and support Onsite Configuration and Installation OEM based training for 03 technical resources	
	NETWORK AND SECURITY (LOT 09)	
9.1	**Wireless Access Point (Unifi Wifi u7-Pro Max or Equivalent)**	
	WiFi 6/7 Dual-radio 2.4 / 5 GHz having 8 spatial streams	**10**
	Coverage: 150 m² or better	
	Connected Devices: 350+	
	Power Method: PoE+	
	Uplink: 2.5GbE / GbE	
	POE Power Adapter: Included	
	WiFi standards: 802.11a/b/g/n/ac/ax/be (WiFi 6/6E/WiFi 7)	
	Wireless security: WPA-PSK, WPA-Enterprise (WPA/WPA2/WPA3/PPSK)	
	BSSID: 8 per radio	
	Guest traffic isolation: Supported	
9.2	**Network switch 1G-24 Port for network connectivity**	
	Ports: At least 24 x 1GbE, 4 x 10G SFP+ including MM Duplex LC SPF transceiver module (fully loaded)	**10**
	Support/EOL: Must have 3+ years for EOL and 5+ years for EOS	
	Management: WEB, CLI, Telnet, SSH	
	Management Port: 10/100/1000BASE-T RJ-45 Ethernet	
	Monitoring: SNMP, RMON, Syslog	
	Flash Memory: 256 MB or higher	
	RAM: 512MB or Higher	
	Remote Management Protocol: SNMP, HTTP, Telnet, SSH	
	Power Supply: 2 (1+1) Hot-swapable	
	Mounting Kit: Included	

		Features:
		  Access Control List
		  Port Security
		  Traffic Segmentation
		STP, PVST/PVST+ / MSTP, RSTP
		  Broadcast/Multicast/Unicast Storm Control
		  DoS Attack Prevention,
		  Static Routing,
		  RIP,
		  OSPF,
		  IPv6 Support
		  VLAN,
		  QoS,
		  IGMP Snooping,
		  Link Aggregation	

		Vendor must quote any or all L2+/ L3 advance or full feature support license (perpetual) where applicable.	
		Warranty: OEM Local NBD 3 Years repair or replace	
9.3		Cisco 10G SFP+ 850nm MM LC Duplex transceiver	**10**
9.4		Cisco 40G QSFP+ MM LC Duplex transceiver	**02**
		SOFTWARE (LOT 10)	
10.1		Windows Server DC latest GUI OLP with Assurance Pack for 64 core (Govt. License)	**01**
10.2		Microsoft SQL Server Enterprise latest for 04 cores	**01**
		Upgradation of Existing Hardware (LOT 11)	
11.1		ECC 64GB RDIMMS 2666MT/s for Dell R740	**12**
		KVM Switch 24-Port Splitter (Imported)	**02**
		HDMI Cables (Active-Fiber) 20 Meter 48gbps with commissioning	**25**
		Dual Port 32GB Fiber Channel HBA for Dell R740	**2**
		DELL OEM Validated 1.92TB SSD upto 24Gbps 512e Hot-plug with caddy	**4**
		DELL OEM Validated, Digital Signed 2.4TB SAS 512e 12Gbps 2.5in Hot-plug Hard Drive with caddy	**4**
		Cat 6 23 AWG Cable roll	**2**
		CAT 6 RJ-45 Connector with Cat6 boots	**100**

	APC Compliant KVM 2G, Server Module, USB with Standard warranty 2 years repair or replace	**4**
	Network base reporting Room and Server Rack temperature, humidity monitor with sensor and installation/commissioning	**Complete Solution**