Notice

Subject: - Draft Technical Specifications of Computer Systems and Laptops for arranging annual rate contract for one year on behalf of various Govt. Departments/organizations.

- 1. Draft technical specifications for arranging Annual rate contract of Computer Systems and Laptops on behalf of various Govt. Departments/organizations for a period of one year is placed at Annexure-I and Annexure-II respectively. The prospective OEMs may submit their queries /suggestions within 3 days from the date of uploading of the draft specifications on the website of HARTRON and IT Department Haryana. The OEMs may submit their queries/suggestions either themselves or through only one authorized distributor at mdhartron@gmail.com.
- 2. The suggestions/queries to be received from the OEMs will be reviewed by the Technical committee under the Chairmanship of Addl. Managing Director Hartron. In case, technical committee desires to invite selected or all OEMs, (either themselves or only one authorized distributor) may be called to present before the committee with authority letter from respective OEMs.
- 3. HARTRON/IT Department reserve the right to accept or reject the queries/suggestions regarding the Technical specifications without assigning any reason(s).

(AMD HARTRON)

Intel Processor Based Computer Systems

Category-I (Intel) (Normal Office Function Computer System):

Туре	Parameter	Required Minimum Specification
Processor	Generation	Intel® Core™ i3 Processor 11th
i i occisso.		Generation or higher.
	CPU Architecture	X64
	Speed (Min Base	2.2 GHz or Higher
	Frequency)	
	Turbo Frequency	4.10 GHz or higher
	Cores	Min. 4
	Threads	Min. 8
	Cache	12 MB or higher
Mother Board	Sound/ Audio System	Integrated
	Memory	1x16 GB DDR-IV (2933 MHz) or higher
		expandable up to 32 GB (Min. 2 DIMM) or
		higher
	Video Graphics	Integrated Graphics
	PCI Slot	Minimum 1 PCI Express x 16
Hard disk Drive	256 GB SSD + 1 TB SATA	(7200 RPM) or 512 GB SSD or higher
(HDD/SSD)	capacity	
Display	Screen Size	19.5" or more TCO 08 certified
	Display Technology	Active Matrix TFT LCD (Backlit LED)
	Resolution	1600x900 or higher
Keyboard	Standard USB OEM make	
Mouse	Optical/Laser USB OEM	make
Operating System	Preloaded OS	Windows 11 Professional 64 bit OEM or
		Higher
	Additional OS	Linux
	supported	
Miscellaneous	Ports, Security & Misc.	Minimum 6 USB Ports (Out of which 3 USB
		3.0 ports and minimum 2 USB ports
		should be at front), 10/100/1000
		Ethernet Card, 1x VGA/DP, 1x Display
		Port/HDMI, Microphone & Stereo Head
		Phone/ Combo port and other standard
	Dawes Commit	ports, TPM 2.0 or higher.
	Power Supply	260 W or less Power supply (>=85%
•	Values	efficient), Active PFC or higher
	Volume	<= 15.5 Liters
Warranty		Min 5 years OEM onsite comprehensive
		warranty.

S#	Category of Standard	Description	Name of Certification
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS 13252(Part1):2010/ IEC 60950 Part1:2005/ UL Certification/ Equivalent Indian Standard
	,	Certification for Electro Magnetic Interference/Radiation under control	FCC/Equivalent certification from NABL approved Lab
		Restriction of Hazardous Substances in manufacturing	India WEEE & India RoHS/ International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or higher/ Equivalent BEE Star rating
3.	Environmental Standards	Environmental Protection Standard	EPEAT/ Equivalent Indian Standard
4.	ISO standard	ISO 9001	ISO 9001

Additional Items

- 1. 1x64 GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16xGB DDR-IV (2933).
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. 21.5-inch Monitor TCO 8 (1980x1080) in lieu of 19.5 Inch Monitor.
- 5. Dos/Linux in lieu of Windows 11 Professional 64 bit Operating Systems.
- 6. Windows STF (Shape the future Program) in lieu of Windows 11 Professional 64 bit Operating Systems.
- 7. Internal Wi-Fi Card.

Note: Please read 1x64GB as 1X16GB DDR-IV RAM (2933Mhz)in Additional items of specifications for all categories of Computer systems.

AMD Processor Based Computer Systems

Category-I AMD (Normal Office Function):

Туре	Parameter	Required Minimum Specification
Processor	Generation	AMD Ryzan 3, 5000 series or higher
	CPU Architecture	x64
	Speed (Min Base	4.0 GHz or higher
	Frequency)	
	Cores	Min. 4
	Threads	Min. 8
	Cache	10 MB or higher
Mother Board	Sound/ Audio System	Integrated
	Memory	1x16 GB DDR-IV (2933 MHz) or higher
		expandable up to 32 GB (Min. 2 DIMM)
		or higher
	Video Graphics	Integrated Graphics
	PCI Slot	Minimum 1 PCI Express x 16
Hard disk Drive	256 GB SSD + 1 TB SATA	(7200 RPM) or 512 GB SSD or higher
(HDD/SSD)	capacity	
Display	Screen Size	19.5" or more TCO 08 certified
	Display Technology	Active Matrix TFT LCD (Backlit LED)
	Resolution	1600x900 or higher
Keyboard	Standard USB OEM make	
Mouse	Optical/Laser USB OEM	make
Operating System	Preloaded OS	Windows 11 Professional 64 bit OEM or Higher
	Additional OS	Linux
Miscellaneous	supported	
Miscellaneous	Ports, Security & Misc	Minimum 6 USB Ports (Out of which 3
		USB 3.0 ports and minimum 2 USB ports
		should be at front), 10/100/1000
		Ethernet Card, 1x VGA/DP, 1x Display
		Port/HDMI, Microphone & Stereo Head
· .		Phone/ Combo port and other standard ports, TPM 2.0 or higher.
	Power Supply	260 W or less Power supply (>=85%
		efficient), Active PFC or higher
	Volume	<= 15.5 L
Warranty		
		Min 5 years OEM onsite comprehensive warranty.

S#	Category of Standard	Description	Name of Certification
1. Safety Standards	Safety of Electronics Products against Electrical Hazards	IS 13252(Part1):2010/ IEC 60950 Part1:2005/ UL Certification/ Equivalent Indian Standard	
		Certification for Electro Magnetic Interference/Radiation under control	FCC/Equivalent certification from NABL approved Lab
		Restriction of Hazardous Substances in manufacturing	India WEEE & India RoHS/ International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or higher/ Equivalent BEE Star rating
3.	Environmental Standards	Environmental Protection Standard	EPEAT/ Equivalent Indian Standard
4.	ISO standard	ISO 9001	ISO 9001

- 1. 1x64 GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16xGB DDR-IV (2933).
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. 21.5-inch Monitor TCO 8 (1980x1080) in lieu of 19.5 Inch Monitor.
- 5. Dos/Linux in lieu of Windows 11 Professional 64 bit Operating Systems.
- 6. Windows STF (Shape the future Program) in lieu of Windows 11 Professional 64 bit Operating Systems.
- 7. Internal Wi-Fi Card.

Intel Processor Based Computer Systems

Category-II Intel (Middle/Higher Management Mid-Scale Development Computer System):

Туре	Parameter	Required Minimum Specification
Processor	Generation	Intel® Core™ i5 Processor 11th
		Generation or higher.
	CPU Architecture	x64
	Speed (Min Base	2.5 GHz or higher
	Frequency)	
	Turbo Frequency	4.4 GHz or higher
	Cores	Min. 6
	Threads	Min. 12
	Cache	12 MB or higher
Mother Board	Sound/ Audio System	Integrated
	Memory	1x16 GB DDR-IV (2933 MHz) or higher
		expandable up to 64 GB (Min. 2 DIMM) or higher
	Video Graphics	Integrated Graphics
	PCI Slot	Minimum 1 PCI Express x 16
Hard disk Drive	512 GB SSD + 1 TB SATA (7)	200 RPM) or higher or 1 TB SSD or higher
	capacity	,
Display	Screen Size	19.5" or more TCO 08 certified
	Display Technology	Active Matrix TFT LCD (Backlit LED)
	Resolution	1600x900 or higher
Keyboard	Standard USB OEM make	
Mouse	Optical/Laser USB OEM ma	ke
Operating System	Preloaded OS	Windows 11 Professional 64 bit OEM or Higher
	Additional OS supported	Linux
Miscellaneous	Ports, Security & Misc.	Minimum 6 USB Ports (Out of which 3
		USB 3.0 ports and minimum 2 USB ports
		should be at front), 10/100/1000
		Ethernet Card, 1x VGA/DP, 1x Display
		Port/HDMI, Microphone & Stereo
		Headphone/ Combo port and other
		standard ports, TPM 2.0 or higher.
	Power Supply	260 W or less Power supply (>=85%
		efficient), Active PFC or higher
	Volume	<= 15.5 Liters
Warranty		Min 5 years OEM onsite comprehensive Warranty.

S#	Category of Standard	Description	Name of Certification
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS 13252(Part1):2010/ IEC 60950 Part1:2005/ UL Certification/ Equivalent Indian Standard
		Certification for Electro Magnetic Interference/Radiation under control	FCC/Equivalent certification from NABL approved Lab
		Restriction of Hazardous Substances in manufacturing	India WEEE & India RoHS/ International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or higher/ Equivalent BEE Star rating
3.	Environmental Standards	Environmental Protection Standard	EPEAT/ Equivalent Indian Standard
4.	ISO standard	ISO 9001	ISO 9001

- 1. 1x64 GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16xGB DDR-IV (2933).
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. 21.5-inch Monitor TCO 8 (1980x1080) in lieu of 19.5 Inch Monitor.
- 5. Dos/Linux in lieu of Windows 11 Professional 64 bit Operating Systems.
- 6. Windows STF (Shape the future Program) in lieu of Windows 11 Professional 64 bit Operating Systems.
- 7. Internal Wi-Fi Card.

AMD Processor Based Computer Systems

Category-II AMD (Middle/Higher Management Mid-Scale Development):

Туре	Parameter	Required Minimum Specification
Processor	Generation	AMD Ryzan 5, 5000 Series or higher
	CPU Architecture	x64
	Speed (Min Base Frequency)	3.9 GHz or higher
	Cores	Min. 6
	Threads	Min. 12
	Cache	19 MB or higher
Mother Board	Sound/ Audio System	Integrated
	Memory	1x16 GB DDR-IV (2933 MHz) or higher
		expandable up to 64 GB (Min. 2 DIMM)
	Video Graphics	Integrated Graphics
	PCI Slot	Minimum 1 PCI Express x 16
Hard disk Drive	512 GB SSD + 1 TB SATA (720	O RPM) or 1 GB SSD or higher capacity.
Display	Screen Size	19.5" or more TCO 08 certified
	Display Technology	Active Matrix TFT LCD (Backlit LED)
	Resolution	1600x900 or higher
Keyboard	Standard USB OEM make	
Mouse	Optical/Laser USB OEM make	
Operating System	Preloaded OS	Windows 11 Professional 64 bit OEM or
		Higher
	Additional OS supported	Linux
Miscellaneous	Ports, Security & Misc.	Minimum 6 USB Ports (Out of which 3
		USB 3.0 ports and minimum 2 USB ports
		should be at front), 10/100/1000
		Ethernet Card, 1x VGA/DP, 1x Display
		Port/HDMI, Microphone & Stereo
		Headphone/ Combo port and other
		standard ports, TPM 2.0 or higher.
	Power Supply	260 W or less Power supply (>=85%
	,	efficient), Active PFC or higher
	Volume	<= 15.5 L
Warranty		Min 5 years OEM onsite comprehensive
		Warranty.

S#	Category of Standard	Description	Name of Certification
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS 13252(Part1):2010/ IEC 60950 Part1:2005/ UL Certification/ Equivalent Indian Standard
		Certification for Electro Magnetic Interference/Radiation under control	FCC/Equivalent certification from NABL approved Lab
		Restriction of Hazardous Substances in manufacturing	India WEEE & India RoHS/ International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or higher/ Equivalent BEE Star rating
3.	Environmental Standards	Environmental Protection Standard	EPEAT/ Equivalent Indian Standard
4.	ISO standard	ISO 9001	ISO 9001

- 1. 1x64 GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16xGB DDR-IV (2933).
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. 21.5-inch Monitor TCO 8 (1980x1080) in lieu of 19.5 Inch Monitor.
- 5. Dos/Linux in lieu of Windows 11 Professional 64 bit Operating Systems.
- 6. Windows STF (Shape the future Program) in lieu of Windows 11 Professional 64 bit Operating Systems.
- 7. Internal Wi-Fi Card.

Intel Processor Based Computer Systems

Category-III (Intel) (Top Management High End Programming/Development Computer System):

Type	Parameter	Required Minimum Specification	
Processor	Generation	Intel® Core™ i7 Processor 11th	
		Generation or higher.	
	CPU Architecture	x64	
	Speed (Min Base	1.6 GHz or higher	
	Frequency)	and an anglici	
	Turbo Frequency	4.9 GHz or higher	
	Cores	Min. 8	
	Threads	Min. 16	
	Cache	16 MB or higher	
Mother Board	Sound/ Audio System	Integrated	
	Memory	1x16 GB DDR-IV (2933 MHz) or higher	
		expandable up to 64 CB (Win 2 Dum)	
		expandable up to 64 GB (Min. 2 DIMM) or higher	
	Video Graphics	Integrated Graphics	
	PCI Slot	Minimum 4 DCL Francis	
Hard disk Drive	512 GB SSD + 1 TB SATA (7	Minimum 1 PCI Express x 16 200 RPM) or 1 TB SSD or higher capacity.	
Display	Screen Size	10 F" or TES SSD or higher capacity.	
	Display Technology	19.5" or more TCO 08 certified	
	Resolution	Active Matrix TFT LCD (Backlit LED)	
Keyboard	Standard USB OEM make	1600x900 or higher	
Mouse	Optical/Laser USB OEM ma	l.a	
Operating System	Preloaded OS		
	retodded 03	Windows 11 Professional 64 bit OEM or	
	Additional OS supported	Higher	
Aiscellaneous	Ports, Security & Misc	Linux	
	is its, seediffy a Misc	Minimum 6 USB Ports (Out of which 3	
		USD 3.0 ports and minimum 2 LICE north	
		310010 be at front), 10/100/1000	
		Ethernet Card, 1x VGA/DP 1x Diamles	
		I UIL/ TUMI, MICTOPHONE & Steroo	
		Headphone/ Combo port and ask	
	Power Supply	standard ports. IPM 2.0 or bights	
	- ower supply	200 W Of less Power supply (>=0E0/	
	Volume	efficient), Active PFC or higher	
Varrantu	votume	<= 15.5 Liters	
arranty			
		Min 5 years OEM onsite comprehensive warranty.	

S#	Category of Standard	Description	Name of Certification
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS 13252(Part1):2010/ IEC 60950 Part1:2005/ UL Certification/ Equivalent Indian Standard
		Certification for Electro Magnetic Interference/Radiation under control	FCC/Equivalent certification from NABL approved Lab
		Restriction of Hazardous Substances in manufacturing	India WEEE & India RoHS/ International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or higher/ Equivalent BEE Star rating
3.	Environmental Standards	Environmental Protection Standard	EPEAT/ Equivalent Indian Standard
4.	ISO standard	ISO 9001	ISO 9001

- 1. 1x64 GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16xGB DDR-IV (2933).
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. 21.5-inch Monitor TCO 8 (1980x1080) in lieu of 19.5 Inch Monitor.
- 5. Dos/Linux in lieu of Windows 11 Professional 64 bit Operating Systems.
- 6. Windows STF (Shape the future Program) in lieu of Windows 11 Professional 64 bit Operating Systems.
- 7. Internal Wi-Fi Card.

AMD Processor Based Computer Systems

Category-III AMD (Top Management High End Programming/Development):

Туре	Parameter	Required Minimum Specification
Processor	Generation	AMD Ryzan 7, 5000 Series or higher
	CPU Architecture	x64
	Speed (Min Base Frequency)	3.8 GHz or higher
* .	Cores	Min. 8
	Threads	Min. 16
	Cache	20 MB or higher
Mother Board	Sound/ Audio System	Integrated
	Memory	1x16 GB DDR-IV (2933 MHz) or higher
		expandable up to 64 GB (Min. 2 DIMM)
	Video Graphics	Integrated Graphics
	PCI Slot	Minimum 1 PCI Express x 16
Hard disk Drive	512 GB SSD + 1 TB SATA (720	0 RPM) or 1 TB SSD or higher capacity.
Display	Screen Size	19.5" or more TCO 08 certified
	Display Technology	Active Matrix TFT LCD (Backlit LED)
	Resolution	1600x900 or higher
Keyboard	Standard USB OEM make	
Mouse	Optical/Laser USB OEM make	
Operating System	Preloaded OS	Windows 11 Professional 64 bit OEM or
		Higher
	Additional OS supported	Linux
Miscellaneous	Ports, Security & Misc	Minimum 6 USB Ports (Out of which 3
		USB 3.0 ports and minimum 2 USB ports
		should be at front), 10/100/1000
		Ethernet Card, 1x VGA/DP, 1x Display
		Port/HDMI, Microphone & Stereo
		Headphone/ Combo port and other
		standard ports, TPM 2.0 or higher.
	Power Supply	260 W or less Power supply (>=85%
		efficient), Active PFC or higher
	Volume	<= 15.5 L
Warranty		Min 5 years OEM onsite comprehensive
		warranty.

S#	Category of Standard	Description	Name of Certification
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS 13252(Part1):2010/ IEC 60950 Part1:2005/ UL Certification/ Equivalent Indian Standard
		Certification for Electro Magnetic Interference/Radiation under control	FCC/Equivalent certification from NABL approved Lab
		Restriction of Hazardous Substances in manufacturing	India WEEE & India RoHS/ International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or higher/ Equivalent BEE Star rating
3.	Environmental Standards	Environmental Protection Standard	EPEAT/ Equivalent Indian Standard
4.	ISO standard	ISO 9001	ISO 9001

- 1. 1x64 GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16xGB DDR-IV (2933).
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. 21.5-inch Monitor TCO 8 (1980x1080) in lieu of 19.5 Inch Monitor.
- 5. Dos/Linux in lieu of Windows 11 Professional 64 bit Operating Systems.
- 6. Windows STF (Shape the future Program) in lieu of Windows 11 Professional 64 bit Operating Systems.
- 7. Internal Wi-Fi Card.

Intel Processor Based Laptops

Category-I (Intel) (Normal Office Function Laptop)

	Туре	Parameter	Specification
1.	Processor	Generation	Intel® Core™ i3 Processor 12 th Generation or higher
35		CPU Architecture	x64
		Efficient Core Max Turbo Frequency	3.30 GHz or higher
		Performance-core Max Turbo Frequency	4.40 GHz or higher
		CPU Cores	Minimum 6
		CPU Threads	Minimum 8
		Cache	Minimum 10 MB or higher
		Wireless Connectivity	IEEE 802.11 ax (Wi-Fi 6), Integrated Bluetooth 5.1
2.	Motherboard	Memory	1x16 GB DDR-IV (2933 MHz) or higher expandable upto 32 GB (with one DIMM free) or higher
		Video Graphics	Integrated HD Graphics or better
		Sound System	Integrated Stereo Speaker
3.	Hard Disk Drive (256 GB SSD + 1TB SATA HDD) or (512 GB S		(256 GB SSD + 1TB SATA HDD) or (512 GB SSD) or higher
4.	Display	Screen Size	14.0" or higher
		Display Technology	Anti-glare LED Backlit Display
		Resolution	1366 x 768 or higher
1		Web Camera	Integrated HD Web Camera (720p or higher)
5.	Keyboard		Normal Keyboard with Touchpad
6.	Operating	Preloaded OS	Windows 11 Professional 64 bit OEM
, .	System	Additional OS Supported	Linux
7.	Miscellaneous	Ports	Minimum 3 USB ports out of which 1 port should be USB 3.0 or higher and 1 port shall be Type C port with docking support, 10/100/1000 Ethernet Card, VGA/HDMI, Microphone, Stereo Headphone, and otherstandard ports.
		Weight with Battery	Less than 2 Kg
		Battery Backup	Minimum 6 hours
		Security	TPM 2.0 or higher
		Warranty	Minimum 3 years OEM on-site comprehensive warranty including battery
		Carry Case, charging adaptor	Good quality carry case/bag, ChargingAdapter

S#	Category of Standard	Description	Name of Certification.	6 /
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS13252 (part1):2010/IEC60950 Part1:2005/UL certification/EquivalentIndian Standard	
		Certification for Electrical magnetic Interference/ Radiationunder control	FCC/Equivalent certification from NABLapproved Lab,	
		Restriction of Hazards Substancein manufacturing	India WEEE & India RoHS/International RoHS	
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or Higher/Equivalent BEEStar rating	
3	Environmental Standards	Environmental protectionstandard	EPEAT/Equivalent IndianStandard	
4	ISO Standards	ISO 9001	ISO 9001	-

Add on items: -

- 1. 1x16GB DDR-IV RAM (2933 MHz).
 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16 GB DDR-IV RAM.
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. Dos/Linux in lieu of Windows 11 Professional.

AMD Processor Based Laptops

Category-I (AMD) (Normal Office Function Laptop)

	Type	Parameter	Specification
١.	Processor	Generation	AMD Ryzen 3, 5000 Series or Higher.
		CPU Architecture	x64
		Speed (Min Base	2.7 GHz or higher
		frequency)	
		Boost Clock	4.1 GHz or higher
		Frequency	
		CPU Cores	Minimum 4
		CPU Threads	Minimum 8
		Cache	Minimum 10 MB or higher
		Wireless	IEEE 802.11 ax (Wi-Fi 6), Integrated Bluetooth 5.1
_		Connectivity	
•	Motherboard	Memory	1x16 GB DDR-IV (2933 MHz) or higher expandable
		\(\(\text{1}\)	upto 32 GB (with one DIMM free) or higher
		Video Graphics	Integrated HD Graphics or better
		Sound System	Integrated Stereo Speaker
	Hard Disk Drive	, , , , , , , , , , , , , , , , , , , ,	(256 GB SSD + 1TB SATA HDD) or (512 GB SSD) or
			higher
	Display	Screen Size	14.0" or higher
	· ·	Display Technology	Anti-glare LED Backlit Display
		Resolution	1366 x 768 or higher
		Web Camera	Integrated HD Web Camera (720p or higher)
	Keyboard		Normal keyboard withTouchpad
	Operating	Preloaded OS	Windows 11 Professional 64 bit OEM
	System	Additional OS	Linux
		Supported	Ellida
	Miscellaneous	Ports	Minimum 3 IISB ports out of which 4
			Minimum 3 USB ports out of which 1 port should be USB 3.0 or higher and 1 port should be USB 3.0 or higher and 1 ports at all 1.
			be USB 3.0 or higher and 1 port shall be Type (
			port with docking support, 10/100/1000 Etherne
			Card, VGA/HDMI, Microphone, Stereo Headphone and otherstandard ports.
		Weight with	Less than 2 Kg
		Battery	Less than 2 kg
		Battery Backup	Minimum 6 hours
		Security	
		Warranty	TPM 2.0 or higher
		, , arrancy	Minimum 3 years OEM on-site comprehensive
		Carry Case,	wairality including pattery
		charging	Good quality carry case/bag, ChargingAdapter
		adaptor	5. 5dapter
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S#	Category of Standard	Description	Name of Certification.
1.	Safety Standards	against Electrical Hazards	IS13252 (part1):2010/IEC60950 Part1:2005/UL certification/EquivalentIndian Standard
		Certification for Electrical magnetic Interference/ Radiationunder control Restriction of Hazards	FCC/Equivalent certification from NABLapproved Lab, India WEEE & India
2.	Energy Efficiency Standards	Substancein manufacturing Energy Efficiency Standard	RoHS/International RoHS Energy Star 7.0 or Higher/Equivalent REEStar ratio
3	Environmental Standards	Environmental protectionstandard	Higher/Equivalent BEEStar rating EPEAT/Equivalent IndianStandard
4	ISO Standards	ISO 9001	ISO 9001

Add on items: -

- 1. 1x16GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16 GB DDR-IV RAM.
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. Dos/Linux in lieu of Windows 11 Professional.

Intel Processor Based Laptops

Category-II (Intel) (Middle/Higher Management Mid-Scale Development Laptop)

f je	Туре	Parameter	Specification
1.	Processor	Generation	Intel® Core™ i5 Processor 12 th Generation or higher
		CPU Architecture	x64
		Efficient Core Max Turbo Frequency	3.10 GHz or higher
		Performance-core Max Turbo Frequency	4.40 GHz or higher
		CPU Cores	Minimum 8
		CPU Threads	Minimum 12
		Cache	Minimum 12 MB or higher
		Wireless Connectivity	IEEE 802.11 ax (Wi-Fi 6), Integrated Bluetooth 5.1 or higher.
2.	Motherboard	Memory	1x16 GB DDR-IV (2933 MHz) or higher expandable upto 32 GB (with one DIMM free) or higher
		Video Graphics	Integrated HD Graphics or better
		Sound System	Integrated Stereo Speaker
3.	Hard Disk Drive		(512 GB SSD + 1TB SATA HDD) or (1 TB SSD or higher)
4.	Display	Screen Size	14.0" or higher
	,	Display Technology	Anti-glare LED Backlit Display
		Resolution	1920x1080 or higher
		Web Camera	Integrated HD Web Camera (720p or higher)
5.	Keyboard		Spill Resistant backlit keyboard with Touchpad
6.	Operating	Preloaded OS	Windows 11 Professional 64 bit OEM
	System	Additional OS Supported	Linux
7.	Miscellaneous	Ports	Minimum 4 USB ports out of which 2 port should be USB 3.0 or higher and 1 port shall be Type C port with docking support, 10/100/1000 Ethernet Card, VGA/HDMI, Microphone, Stereo Headphone, and otherstandard ports.
		Weight with Battery	Less than 2 Kg
		Battery Backup	Minimum 6 hours
		Security	TPM 2.0 or higher
		Warranty	Minimum 3 years OEM on-site comprehensive warranty including battery
	· .	Carry Case, charging adaptor	Good quality carry case/bag, ChargingAdapter

Certification required: -

S#	Category of Standard	Description	Name of Certification.
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS13252 (part1):2010/IEC60950 Part1:2005/UL certification/EquivalentIndian Standard
		Certification for Electrical magnetic Interference/Radiationunder control	FCC/Equivalent certification from NABLapproved Lab,
		Restriction of Hazards Substancein manufacturing	India WEEE & India RoHS/International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or Higher/Equivalent BEEStar rating
3	Environmental Standards	Environmental protectionstandard	EPEAT/Equivalent IndianStandard
4	ISO Standards	ISO 9001	ISO 9001

Add on items: -

- 1. 1x16GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16 GB DDR-IV RAM.
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. Dos/Linux in lieu of Windows 11 Professional.

AMD Processor Based Laptops

Category-II (AMD) (Middle/Higher Management Mid-Scale Development)

	Туре	Parameter	Specification
1.	Processor	Generation	AMD Ryzen 5, 5000 Series or Higher
		CPU Architecture	x64
		Speed (Min Base	2.3 GHz or higher
		frequency)	
		Boost Clock	4.3 GHz or higher
		Frequency	
		CPU Cores	Minimum 6
		CPU Threads	Minimum 12
		Cache	Minimum 19 MB or higher
		Wireless	IEEE 802.11 ax (Wi-Fi 6), Integrated Bluetooth 5.1
		Connectivity	4 44 60 000 11/4
2.	Motherboard	Memory	1x16 GB DDR-IV (2933 MHz) or higher expandable
		Video Cuenhice	upto 32 GB (with one DIMM free)
		Video Graphics	Integrated HD Graphics or better
		Sound System	Integrated Stereo Speaker
3.	Hard Disk Drive		(512 GB SSD + 1TB SATA HDD) or (1 TB SSD)
			or higher
4.	Display	Screen Size	14.0" or higher
1		Display Technology	Anti-glare LED Backlit Display
		Resolution	1920x1080 or higher
		Web Camera	Integrated HD Web Camera (720p or higher)
5.	Keyboard		Spill Resistant backlit keyboard withTouchpad
6.	Operating	Preloaded OS	Windows 11 Professional 64 bit OEM
	System	Additional OS	Linux
		Supported	Minimum 4 USB ports out of which 2 port should
7.	Miscellaneous	Ports	be USB 3.0 or higher and 1 port shall be Type C
			port with docking support, 10/100/1000 Ethernet
			Card, VGA/HDMI, Microphone, Stereo Headphone,
			and otherstandard ports.
		144 - 1 - 1-4 - 1-44 -	Less than 2 Kg
		Weight with	עביי נוומוו ב תק
		Battery Battery Backup	Minimum 6 hours
			TPM 2 0 or higher
		Security	Minimum 3 years OEM on-site comprehensive
	·	Warranty	warranty including battery
		Carry Case	Good quality carry case/bag, ChargingAdapter
		Carry Case, charging	0000 424113, 24117, 11
a . 1		adaptor	
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S#	Category of Standard	Description	Name of Certification.
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS13252 (part1):2010/IEC60950 Part1:2005/UL certification/EquivalentIndian Standard
		Certification for Electrical magnetic Interference/ Radiationunder control Restriction of Hazards Substancein manufacturing	FCC/Equivalent certification from NABLapproved Lab, India WEEE & India RoHS/International RoHS
2.	Energy Efficiency Standards		Energy Star 7.0 or Higher/Equivalent BEEStar rating
3	Environmental Standards	Environmental protectionstandard	EPEAT/Equivalent IndianStandard
4	ISO Standards	ISO 9001	ISO 9001

Add on items: -

- 1. 1x16GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16 GB DDR-IV RAM.
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. Dos/Linux in lieu of Windows 11 Professional.

Intel Processor Based Laptops

Category-III (Intel) (Top Management High End Programming/Development Laptop)

Cui	3 , , , , , ,	op management riigir i	Specification
	Type	Parameter	Intel® Core™ i7 Processor 12 th Generation or
1.	Processor	Generation	higher
		CPU Architecture	x64
		Efficient Core Max Turbo Frequency	3.4 GHz or higher
		Performance-core Max Turbo	4.7 or higher
		Frequency	42
		CPU Cores	Minimum 12
		CPU Threads	Minimum 16
		Cache	Minimum 18 MB or higher
		Wireless	IEEE 802.11 ax (Wi-Fi 6), Integrated Bluetooth 5.1
		Connectivity	or higher
2.	Motherboard	Memory	1x16 GB DDR-IV (2933 MHz) or higher expandable upto 64 GB (with one DIMM free)
		Video Graphics	Integrated HD Graphics or better
		Sound System	Integrated Stereo Speaker
		, , , , , , , , , , , , , , , , , , , ,	3
3.	Hard Disk Drive		(512 GB SSD + 1TB SATA HDD) or (1 TB SSD) or higher
4.	Display	Screen Size	14.0" or higher
	,	Display Technology	Anti-glare LED Backlit Display
		Resolution	1920x1080 or higher
		Web Camera	Integrated HD Web Camera (720p or higher)
5.	Keyboard		Spill Resistant backlit keyboard withTouchpad
6.	Operating	Preloaded OS	Windows 11 Professional 64 bit OEM
	System	Additional OS Supported	Linux
7.	Miscellaneous	Ports	Minimum 4 USB ports out of which 2 port should be USB 3.0 or higher and 1 port shall be Type C port with docking support, 10/100/1000 Ethernet Card, VGA/HDMI, Microphone, Stereo Headphone, and otherstandard ports.
		Weight with Battery	Less than 2 Kg
		Battery Backup	Minimum 6 hours
		Security	TPM 2.0 or higher
		Warranty	Minimum 3 years OEM on-site comprehensive warranty including battery
		Carry Case, charging adaptor	Good quality carry case/bag, ChargingAdapter

S#	Category of Standard	Description	Name of Certification.
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS13252 (part1):2010/IEC60950 Part1:2005/UL certification/EquivalentIndian Standard
		Certification for Electrical magnetic Interference/ Radiationunder control	FCC/Equivalent certification from NABLapproved Lab,
		Restriction of Hazards Substancein manufacturing	India WEEE & India RoHS/International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or Higher/Equivalent BEEStar rating
3	Environmental Standards	Environmental protectionstandard	EPEAT/Equivalent IndianStandard
4	ISO Standards	ISO 9001	ISO 9001

Add on items: -

- 1. 1x16GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16 GB DDR-IV RAM.
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. Dos/Linux in lieu of Windows 11 Professional.

AMD Processor Based Laptops

Category-III (Top Management High End Programming/Development)

	Туре	Parameter	Specification		
1.	Processor	Generation	AMD Ryzen 7, 5000 Series or Higher.		
		CPU Architecture	x64		
		Speed (Min Base	2.0 GHz or higher		
		frequency)			
		Boost Clock	4.5 GHz or higher		
		Frequency			
		CPU Cores	Minimum 8		
		CPU Threads	Minimum 16		
		Cache	Minimum 20 MB or higher		
		Wireless	IEEE 802.11 ax (Wi-Fi 6), Integrated Bluetooth 5.1		
		Connectivity	(
2.	Motherboard	Memory	1x16 GB DDR-IV (2933 MHz) or higher expandable		
			upto 64 GB (with one DIMM free)		
	4	Video Graphics	Integrated HD Graphics or better		
		Sound System	Integrated Stereo Speaker		
3.	Hard Disk Drive		(512 GB SSD + 1TB SATA HDD) or (1 TB SSD)		
			or higher		
4.	Display	Screen Size	14.0" or higher		
		Display Technology	Anti-glare LED Backlit Display		
		Resolution	1920x1080 or higher		
_	1/	Web Camera	Integrated HD Web Camera (720p or higher)		
5.	Keyboard	D. 1. 1.00	Spill Resistant backlit keyboard with Touchpad		
6.	Operating	Preloaded OS	Windows 11 Professional 64 bit OEM		
	System	Additional OS	Linux		
7.	Miscellaneous	Supported			
/ ,	miscellaneous	Ports	Minimum 4 USB ports out of which 2 port should		
		,	be USB 3.0 or higher and 1 port shall be Type C		
			port with docking support, 10/100/1000 Ethernet		
			Card, VGA/HDMI, Microphone, Stereo Headphone,		
		Waightwith	and otherstandard ports.		
		Weight with Battery	Less than 2 Kg		
		Battery Backup	Minimum (have		
		Security	Minimum 6 hours		
		Warranty	TPM 2.0 or higher		
		Trairuity	Minimum 3 years OEM on-site comprehensive		
		Carry Case,	Wallally liktuding patter/		
		charging	Good quality carry case/bag, ChargingAdapter		
		adaptor			

S#	Category of Standard	Description	Name of Certification.
1.	Safety Standards	Safety of Electronics Products against Electrical Hazards	IS13252 (part1):2010/IEC60950 Part1:2005/UL certification/EquivalentIndian Standard
		Certification for Electrical magnetic Interference/ Radiationunder control	FCC/Equivalent certification from NABLapproved Lab,
		Restriction of Hazards Substancein manufacturing	India WEEE & India RoHS/International RoHS
2.	Energy Efficiency Standards	Energy Efficiency Standard	Energy Star 7.0 or Higher/Equivalent BEEStar rating
3	Environmental Standards	Environmental protectionstandard	EPEAT/Equivalent IndianStandard
4	ISO Standards	ISO 9001	ISO 9001

Add on items: -

- 1. 1x16GB DDR-IV RAM (2933 MHz).
- 2. 1x32GB DDR-IV RAM (2933 MHz) in lieu of 16 GB DDR-IV RAM.
- 3. 1 TB SSD in lieu of 512 GB SSD.
- 4. Dos/Linux in lieu of Windows 11 Professional.