

E-GOVERNANCE UNIT, EDUCATION DEPARTMENT

PROCEEDINGS OF THE TAP MEETING HELD UNDER THE CHIRMANSHIP OF PRINCIPAL SECRETARY TO GOVERNMENT (PRIMARY AND SECONDARY EDUCATION)

Date : 06.06.2018

Time : 3.30 pm

Members present:

1. Dr. Shalini Rajneesh, IAS, Principal Secretary to Government, Primary and Secondary, Education Department – Chairman
2. Sri. Reju M T, SPD /Commissioner, Department of Public Instructions, Bangalore
3. Prof. Chandrashekhara Ramanathan, IITB, Electronic city, Bangalore – TAP Advisor
4. Prof. S. Ramanathan, Head CND, Bangalore– TAP Advisor
5. Sri. YSS Reddy, Technical Director, NIC, Bangalore
6. Smt. Sumangala , Director, KSEEB, Bangalore
7. Sri. Gopala Krishna , Director DSERT
8. Sri Hosamani H Director of Public Libraries
9. Sri Narsimhaih M.D KTBS Bangalore
10. Sri Hegde DDPI (M & E)
11. Sri Revaiah Under Secretary Finance Dept (Expenses -8)
12. Sri. Shivakumar Talwar, System Analyst, DPAR, e-Governance
13. Sri.SRS Nadhan , Under Secretary to Government(Planning), Education Department.

The meeting of the Technical Advisory Panel was held on 06.06.2018 to consider the proposal for purchase of laptops, Desktops, Computers, MFD Printers, Scanners, Web cameras, Tablets, Projectors, Software for Departmental use, Barcode Printers and Barcode Scanners.

1. The Director, DSERT

Director, DSERT briefed the Committee that the Department has entered into an Agreement with Khan Academy for using existing 3200 Mathematics and 2500 Science Videos of Khan academy and also for producing Educational Resource in future, in collaboration with the Department of Public Instruction. In order to use existing videos as well as the new videos that are yet to be developed in local setup (i.e to be used in schools), he stressed the need for Content Localization using the Technical expertise of the Khan Academy. The Committee reviewed the proposal put up by the Director for the said purpose, and felt that **Technical Specification of Studio Enclosure to be built in the premises of DSERT doesn't come under its purview.** Hence, Committee urged Director to put up the said proposal in file to Senior Engineer SSA for all Civil related works & seek the approval of the same from

the SPD. The Committee examined changes In Specifications of Laptops, All-in-one Desktops, and **All-in-one Desktop (to be used as servers)**, Microphones, Pro-Tablets, and Software requirements put up by DSERT. The Committee approved the Specification of Laptops (04), Apple iMac Desktops (02), Blue Yeti USB Microphone (02), Watcom intuos Pro Tablets(02), Techsmith Camtasia Studios-Software(02), Sketch book pro- software (02). As regards the pre-bid queries All-in-one Desktops(15,000) to be used as Cache, and All-in-one Desktops to be used as Servers (1000) the clarifications given by the e-Governance vide mail dated 30/5/2018 was upheld by the Technical Committee. The Committee felt that All-in-one Computers need not be called servers.

Details of Approved Items along with their specifications is shown in Annexure -1.

The proposal of **KYAN** Integrated Teaching Device from IL&FS Education and Technology Services company was discussed with comparative Cost of both Kyan Specification & Combination of conventional devices like Laptop + LCD Projector to be procured by DSERT.

The comparative prices of Conventional and Integrated devices was found in favour of conventional laptop, projector and UPS. The committee felt that if the K-Yan Interactive Teaching Device was less expensive, then that would be preferred as it is highly portable and also it comes with special features such as 30 watts Speaker, TV tuner card with built-in-wifi with coverage of 300 inches display. It also has ease of use with a single cable connect. The prices may be re-verified by the commissioner.

2. SPD (SSA & RMSA)

State Project Director (SSA & RMSA) informed the committee that pre-bid meeting was conducted for procurement of 4000 mini laptops & 9000 Tablets. Based on the inputs received at the Pre-bid meeting, he wanted few changes in the technical specifications of the Mini Laptops as well as in respect of Tablets.

- a) The Committee went through the changes requested by SPD & NISG representative regarding reviewing of specification in respect of Mini Laptops and approved Modified Specification for **4000** Mini Laptops (AMD A9 9420 which with 1 MB Cache with equivalent performance).
- b) The Committee also went through the Changes requested by SPD & NISG representative regarding reviewing of Specification in respect of 9000 Tablets from the angle of Network support, Connectivity and Certification. After seeking few clarifications, the Committee approved Modified Specification for **9000** Tablets.

Details of Approved Items along with their specifications is shown in Annexure -2.

3. Director, KSEEB / KSQAAC

Director KSEEB / KSQAAC briefed committee about need for modernizing the existing old and redundant Computer and Computer related Peripheral devices. Director wanted the Committee to approve the required specification in respect of Desktops, Laptops, MFD Photo copy Printers, and LCD Projectors. The Committee went through the specification requested by the Director KSEEB/KSQAAC and approved the specification of devices listed below.

Slno	Office	Particulars of the devices	No. of Devices approved
1	KSEEB	a) Desktop computers	25 Nos
		b) MFD Photocopy Printers	03 Nos
2	KSQAAC	a) Desktop computers	04 Nos
		b) MFD Photocopy Printers	04 Nos
		c) Laptops	05 Nos.
		d) LCD Projector	01 No.

Details of Approved Items along with their specifications is shown in Annexure -3 and 3A

4. Managing Director Karnataka Text Book Society (KTBS)

Managing Director KTBS pointed out the need to replace the existing old Desktops, Laptops with the new one for office needs. In addition, he also requested Licensed Softwares for the purpose of Desktop Publishing leading to design of Textbooks and day to day needs in the office. The Committee went through the specification requested for Desktop Computers (16 Nos), Laptops (4Nos) and Software such as Adobe Page Maker 7 or Latest edition (01 No.) , Adobe -in- Design CS-6 or Latest edition(01 No.), Photoshop-CS-6 or Latest edition(01 No.) and Coral drawa-6 or Latest edition(01 No.) and approved Specificationfor all the above mentioned items.

Details of Approved Items along with their specifications is shown in Annexure -4.

5. Director Public Libraries (DPL)

Director Public Libraries briefed the committee about ongoing digitalization as well as upgradation of Public Libraries in Districts and Taluks. He pointed out that Computers and peripheral devices are absolutely essential for process of computerizing Biometric attendance, issue of books to public, and introduction of LMS(Letter Monitoring System) &FMS (File Monitoring System) in all Public

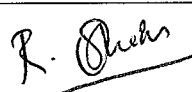
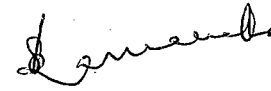
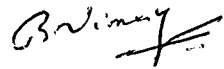
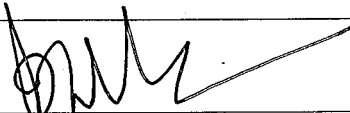
Libraries. He placed request for approval of Specification in respect of Desktops, Laptops, UPS with Battery Bank, Barcode Reader, Barcode Printers, Tablets and Wi-Fi Routers. The Committee went through the specification requested for Desktop Computers (899 Nos), Laptops (03 Nos), UPS (387 Nos), Printer /Scanner (173 Nos), Barcode Reader(11 Nos), Barcode Printers(11 Nos) Android Tablets(1088 Nos), Wi-Fi Routers (272 Nos). After thorough examination of the requirements and financial impact, the committee expressed opinion that instead of Buying Desktop Computers numbering 899&supplementing it with another 387 UPS with Battery Bank for power backup, Purchase of Laptops will be more Economical as the same doesn't require additional purchase of UPS with Battery Bank. Accordingly Committee approved Specification for Purchase Laptops (899 +03= 902 Nos). The Committee also approved specifications pertaining to other items such as Barcode Reader(11 Nos), Barcode Printers(11 Nos), Printer/Scanner(173 Nos), Android Tablets (1088 Nos), Wi-Fi Routers (272 Nos).

Details of Approved Items along with their specifications is shown in Annexure -5

The meeting concluded with vote of thanks

Shah
(Dr. Shalini Rajneesh)
Principal Secretary
Primary & Secondary Education
And Chairman, TAP Committee

List of TAP Committee members participated in the meeting:

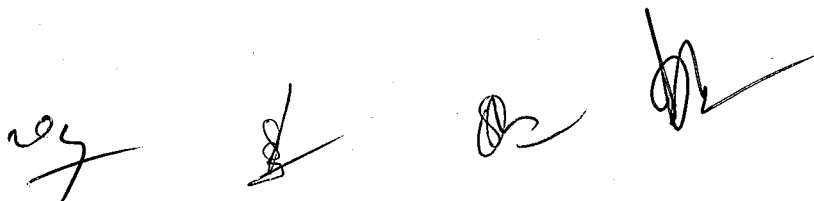
Slno	Name and address of the TAP Member	Signature
1	Sri. Chandrashekhar Ramanathan IITB Bengaluru	
2	Sri Ramanathan, Head CND, ISAC, Bengaluru	
3	Technical Director NIC	
4	Senior Programmer, DPAR eGovernance, Bengaluru	

Annexure -1

DSERT

❖ Laptop Specification:

Sl no	Feature	Approved Specification
1	Processor	Intel Core i3-7100 /7100T (3.9 GHz, 3 MB Cache) or AMD A10 9700 (3.5 GHz, 2 MB Cache) or Latest higher Generation
2	Display	15.6" or higher with minimum 1366X768 resolution Options available at HD (1366x768), HD+ (1600x900) and FHD (1920x1080)
3	Memory	4GB DDR4 with 1 free slot upgradable to 8GB
4	Secondary Storage	1TB HDD or higher
5	Connectivity Technology	WiFi 802.11 b/g/n/ac Adapter
6	Keyboard	Standard keyboard and touch pad
7	Optical Drive	Supermulti tray-in DVD Drive
8	Ports / Card reader	Minimum 3 USB ports with at least one USB 3.0, Media card reader, VGA/HDMI port, RF45 port
9	Battery	4 hour backup during normal usage
10	Audio and Visual	Built in microphone and stereo sound speakers, HD Webcam
11	Laptop Casing	Strong Hinges with Casing for longer durability and stability for good quality support structure
12	Weight	Not more than 3 Kgs. Including battery
13	Carry Case	Good quality backpack should be provided by the vendor
14	Operating System	Windows 10 - 64 bit Professional edition and Ubuntu Linux dual boot
15	Software	Apache Open Office preloaded / Libre Open Office preloaded
16	Antivirus	Pre-Loaded with Latest version of with 5 Yrs subscription for Antivirus Symantec / MacAfee/NOD32/eTrust /Kaspersky /eScan / Quickheal
17	Warranty	Five Years Comprehensive maintenance at site (5 Yrs on battery and adapter)
18	Certification	EPEAT Registered, Energy Star 6.0



❖ **Apple iMac Desktop Specification:**

Slno	Feature	Approved Specifications
1	Model	MNE92HN/A
2	Processor Brand	Intel
3	Processor Type	Core i3 (Core i5 if Core i3 is not available)
4	Processor Speed	3.4 GHz
5	Processor Count	4
6	RAM Size	8 GB
7	Computer Memory Type	DDR3 SDRAM
8	Hard Drive Size	1 TB
9	Hard Drive Interface	Serial ATA
10	Graphics	Radeon Pro 570 with 4GB of VRAM
11	Display	27-inch (diagonal) Retina 5K display, 5120x2880 resolution with support for one billion colours, 500 nits brightness, Wide colour (P3)
12	Wireless Type	802.11B, 802.11G, 802.11n
13	Hardware Platform	Mac
14	Operating System	macOS Sierra or Latest
15	Antivirus	Pre-Loaded with suitable MAC compatible Antivirus with 5 year warranty.

❖ **Blue Microphones Yeti USB Microphone Specification:**

Slno	Particulars	Approved Specification
1	Model	1950 Blue Microphone Yeti
2	Power Requirement	5 V 150 mA 0.13 Watts
	Capsules	Condenser, pressure gradient
3	Polar Patterns	Cardioid, bidirectional, omnidirectional, stereo
4	Frequency Response	20Hz - 20kHz
5	Sample Rate	48kHz
6	Bit Rate	16bit
7	Max SPL	120dB (THD: 0.5% 1kHz)
8	System Requirements	PC: Windows 8, Windows 7, Windows Vista, XP Home Edition or XP Professional, USB 1.1/2.0, 64 MB RAM (minimum).Macintosh: Mac OSX (10.4.11 or higher), USB 1.1/2.0, 64 MB RAM (minimum)
9	Auxiliaries	Adjustable stand, USB cable and instructions.

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❖ **Wacom Intuos Pro PTH860 Large Graphics Input Tablet Specification:**

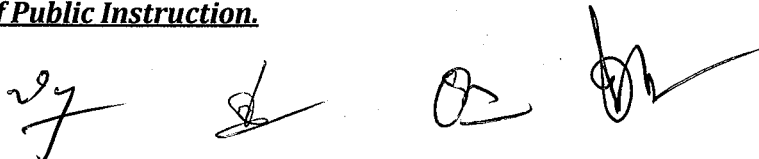
Slno	Particular	Approved Specification
1	Brand	Wacom
2	Series	Intuos Pro
3	Colour	Black
4	Item Height	8 Millimeters
5	Item Width	28.4 Centimeters
6	Item Weight	1.3 Kg
7	Product Dimensions	42.6 x 28.4 x 0.8 cm
8	Batteries:	1 Lithium Polymer batteries required. (included)
9	Item model number	PTH860
10	Number of USB 2.0 Ports	1
11	Voltage	120 Volts
12	Lithium Battery Energy Content	4.44 Watt Hours
13	Lithium battery Voltage	1.5 Volts
14	Lithium battery Weight	0.24 Grams
15	Number of Lithium Ion Cells	1
16	Included Components	Large Pen Tablet Pro Pen 2 (Battery free), Pen Stand (Includes 6 standard nibs and 4 Felt nibs), 4 Extra Pen Color Rings, Texture Sheet Sample card, 2m USB Cable, Quick Start Guide, Regulation Sheet, Online User Manual, Important Product Information Documentation

❖ **Software Specification:**

Slno	Particular	Approved Specification
1	Techsmith Camtasia Studio	Version : Camtasia 9 OS Support : MacOS, Windows System requirements for Camtasia (Mac) <ul style="list-style-type: none"> • Mac computer with an Intel processor (Recommended: Dual core 2.0GHz or faster) • macOS 10.10 or later Quartz Extreme support (rendering is not supported on external USB monitors) • 2GB of RAM (Recommended: 4GB of RAM or greater) • 4GB of available disk space (minimum) • QuickTime X or later • Playback using the Smart Player is supported on Internet Explorer 11+, Chrome, Edge, Firefox, Safari 9+, iOS 9+, Android 4+ (Latest Chrome required) • Powerpoint Import requires PowerPoint 2016 for Mac
2	Sketch book Pro	Raster Graphic Editor tool by Autodesk

Note :Licenses for above mentioned Softwares shall be in the name of Director, DSERT

Bangalore, Department of Public Instruction.







❖ **All-In-One computers:**

Sl.No	Description	Approved Specification
1	Processor	Intel i3-7100/7100T (3.9 GHz, 3 MB Cache) or Intel Core i3 Latest Generation or AMD A10 9700 (3.5 GHz, 2 MB Cache) or AMD A10 Latest Generation
2	Chipset	Intel Q Series / AMD B Series
3	Motherboard	OEM Motherboard with Hardware TPM 2.0
4	RAM	8 GB DDR 4 2400 Mhz RAM or higher
5	Hard Drive	1 TB SATA HDD or higher
6	Audio	Integrated HD Audio with two internal Speakers (2W x 2)
7	Ethernet	Integrated Gigabit Ethernet Connection (10/100/1000 Mbps)
8	Wi-Fi	802.11 b/g/n
9	Display Monitor	19.5" HD, Anti-glare Display of higher
10	Keyboard	USB Keyboard (Same Make as PC)
11	Mouse	USB 2 button optical Scroll mouse (Same make as PC)
12	Ports	5 USB ports or higher (minimum 2 USB 3.0), 1 Ethernet (RJ-45), 1 HDMI/ DP/VGA Port, headphone / microphone combo jack (3.5 mm)
13	Webcam & Mic	Integrated HD Webcam with Microphone
14	Certifications	For OEM : ISO 9001 : 2008 or Latest For PC : MS Windows, Energy Star, EPEAT
15	Operating System	Preloaded Linux, Ubuntu
16	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAFee/NOD32/eTrust /Kaspersky /eScan / Quickheal
17	Software	Pre Load with open office
18	Accessories	With required connecting cables and driver media should be supplied.
19	Warranty	5 Years onsite comprehensive warranty

❖ **All in One Desktop (To be used as Server AOI Desktops)**

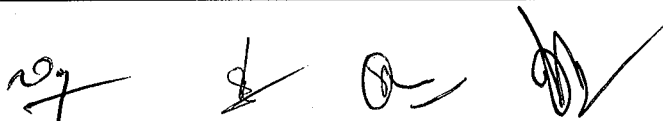
Sl.No	Description	Approved Specification
1	Processor	Intel i3-7100/7100T (3.9 GHz, 3 MB Cache) or Intel Core i3 Latest Generation or AMD A10 9700 (3.5 GHz, 2 MB Cache) or AMD A10 Latest Generation
2	Chipset	Intel Q Series / AMD B Series
3	Motherboard	OEM Motherboard with Hardware TPM 2.0
4	RAM	8 GB DDR 4 2400 Mhz RAM or higher
5	Hard Drive	1 TB SATA HDD or higher
6	Optical Drive	DVD Reader and Writer
7	Audio	Integrated HD Audio with two internal Speakers (2W x 2)
8	Ethernet	Integrated Gigabit Ethernet Connection (10/100/1000 Mbps)
9	Wi-Fi	802.11 b/g/n
10	Display Monitor	19.5" HD, Anti-glare Display of higher
11	Keyboard	USB Keyboard (Same Make as PC)
12	Mouse	USB 2 button optical Scroll mouse (Same make as PC)
13	Ports	5 USB ports or higher (minimum 2 USB 3.0), 1 Ethernet (RJ-45), 1 HDMI/ DP/VGA Port, headphone / microphone combo jack (3.5 mm)
14	Webcam & Mic	Integrated HD Webcam with Microphone
15	Certifications	For OEM : ISO 9001 : 2008 or Latest
		For PC : MS Windows, Energy Star, EPEAT
16	Operating System	Preloaded Linux, Ubuntu
17	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAfee/NOD32/eTrust /Kaspersky /eScan / Quickheal
18	Software	Pre Load with open office
19	Accessories	With required connecting cables and driver media should be supplied.
20	Warranty	5 Years onsite comprehensive warranty

Annexure - 2
STATE PROJECT DIRECOR (SSA & RMSA)

❖ **Specifications for Mini Laptop Computers for supply to CRCs**





Sl No.	Component	Approved Specifications
	Constructions and External	Metal / Alloy / reinforced hinges for display. The casing ABS plastic display screen back with Government approved designed logo.
1	Processor	Intel Core i3 6006-U / AMD A9 9420 or Latest higher Generation 2.0 GHz or higher frequency ,1 MB Cache or higher ,64-bit support ,Launched in the year 2015 or later
2	Operating System	Genuine Microsoft Windows – 10 pro 64-bit
3	Chipset	Chipset compatible to above mentioned processor
4	Main Memory	4GB DDR3-1600 MHz RAM or higher (with one empty slot)
5	LCD Display	14.0" or higher LED backlight LCD display with 1024X768 resolution or higher
6	Graphics	On board HD graphics
7	Hard Disk Drive	1TB SATA HDD or higher
8	Camera	Web Camera
9	Connectivity Technology	On board RJ 45 – 10/100/1000 Mbps Ethernet controller WLAN : IEEE 802.11 b-g-n, WLAN : Module Built in Bluetooth v 4.0 or higher
10	Interface, I-O port	Combo jack port or 1 MIC in, 1 speaker / headphone out jack 1 HDMI port, 1 VGA port / USB to VGA converter Min. 2 USB 2.0 ports, 1 USB-3.0 port
11	Audio	High definition Audio standard support , Build in Stereo speakers , Built in Microphone
12	Battery Backup	Min. 4.0 hours
13	Power Management	Full feature ACPI power management standard : supports stand-by and Hibernation power saving mode.
14	AC Adapter	Standard 3 pin power adaptors for India with power cord.
15	Pointing Device	Built-in touchpad with scroll
16	Key Board	Standard QWERTY key board
17	Warranty	5-years comprehensive warranty (3 Yrs for battery pack and adaptor) at District level
18	Certification	Energy Star 5.0, Windows 10, ISO 9001 : 2008 certificate for OEM, EPAT registered ED.
19	Bag	Backpack carry bag.
20	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAfee/NOD32/eTrust /Kaspersky /eScan / Quickheal with support for 5 years.



❖ **TABLET Specifications for Schools**

(Android version without in-built Biometric reader but with a provision to connect UIDAI certified Biometric device)

Sl. No.	Description	Approved Specifications
1	Processor	Minimum 1.3 GHz Quad core Higher
2	SIM	GSM SIM Card slot
3	Network Support	2G, 3G & 4G or LTE Support
4	Display	Minimum 8" inches Capacitive touch screen or higher Minimum resolution 1280x800 pixels
5	Internal Storage	16 GB or Higher
6	RAM	2 GB or above
7	Connectivity	-Mandatory EDGE / 3G & 4G or LTE Mobile data support -802.11 a/b/g/n or higher
8	Camera	Primary (Rear) - 5 MP or higher with Auto Focus Feature Secondary camera - 2 MP or Higher
9	Operating System	Android 6.0 or higher
10	Audio	Internal Speaker; 3.5 mm Audio Jack
11	Location Technology	GPS & AGPS facility for capturing the location coordinates
12	Certification	BIS certification, CE,FCC or ROHS
13	Battery	Minimum 4000mAh Battery or Higher
14	Bluetooth	Bluetooth v4.0 or higher
15	Warranty	3 years warranty at district level
16	Charger	Standard Charger for India
17	Cover	Durable Flip case cover

Annexure -3

Karnataka Secondary Education Examination Board (KSEEB)

❖ Desktop Computers

Sl No	Feature	Specifications
1	Processor	Intel i3 -7500 (3.4 GHZ;) OR AMD R3 1300 (3.5 GHZ) Or Better
2	Chipset	Compactable chipset to above processor
3	Graphics	Integreted HD Graphics
4	RAM	8 GB DDR4 2400MHz or Better with Expandability up to 64 GB
5	Hard Disk	1 TB
6	Internal Bays	2Nos or More
7	External Bays	1 No or More
8	DIMM Slots	4 Nos or More
9	Optical Drive	DVD R/W
10	Operating System	Windows 10 HOME
11	Cabinet	Tower
12	Network Connectivity	10/100/1000 on board Integrated Gigabit Port
13	Expansion Slots (PCIe x 1)	1 No or More
14	Expansion Slots (PCIe x 16)	2 Nos or More
15	USB Port	USB 2.0 - 4 Nos or More USB 3.0 - 4 Nos or More Provide 2 Nos of USB in the Front
16	Ports	VGA , HDMI / Display port
17	Monitor	19.5 inch or higher with 1600 X 900 or Higher resolution with internal speakers
18	Keyboard and Mouse	Standard keyboard and optical Mouse
19	Power supply	240 W or above
20	Power Efficiency	80% or above
21	Certificates	Energy star for given model , For Monitor - TCO 7.0 or Higher For OEM - ISO 9001:2008 or Higher
22	Warranty	3 Years onsite warranty
23	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAFee/NOD32/eTrust /Kaspersky /eScan / Quickheal



❖ **MFD Photocopy Printers:**

Sl No	Feature	Approved Specification
1	Type	Multi-functional Office machine.
2	Technology	Mono component With separate Drum and Toner.
3	Paper size (Original/Image)	A3 & A4
4	Minimum Speed per minute In A4 size	25 CPM
5	Memory (RAM)	2GB
6	Hard Disk	250 GB
7	Duplexing feature Availability	Yes
8	Network feature Availability	Yes
9	Document feeder	DADF
10	Wi-Fi Availability	Yes
11	Processor/CPU	1.75Ghz
12	Control Panel	10.1 inch TFT LCD WSVGA Colour Touch Panel
13	Print Resolution	up to 1,200 dpi x 1,200 dpi
14	Additional Print Options for paper saving	Force Hold print, Direct Print from USB (JPEG/PDF/TIFF/XPS)
15	Authentication	Picture Login Authentication, User Authentication, Department ID Authentication, (Device and Function Level Login), Access Management System
16	Tray Capacity	1200 Pages
17	Yield (No Of Copies)- M/C	1000000 Pages
18	Mandatory BIS Registration	Yes
19	Scanning speed	up to 51ipm.
20	Scanning features	Color Scanning Option with flexible, reusable digital formats including Searchable PDF, XPS and TIFF or JPEG formats Convenience of storing frequently printed documents on the MFD/Photocopier HDD
21	Warranty	3 Years onsite warranty

Annexure - 3 A

Karnataka State Quality Assurance Accreditation Cell (KSQAAC)

❖ Desktop Computers :

Sl No	Feature	Specifications
1	Processor	Intel i3-7500 (3.4 GHZ;) OR AMD R3 1300 (3.5 GHZ) Or Better
2	Chipset	Compactable chipset to above processor
3	Graphics	Integreted HD Graphics
4	RAM	8 GB DDR4 2400MHz or Better with Expandibility up to 64 GB
5	Hard Disk	1 TB
6	Internal Bays	2Nos or More
7	External Bays	1 No or More
8	DIMM Slots	4 Nos or More
9	Optical Drive	DVD R/W
10	Operating System	Windows 10 HOME
11	Cabinet	Tower
12	Cabinet Volume	14 Litres or Higher
13	Network Connectivity	10/100/1000 on board Integrated Gigabit Port
14	Expansion Slots (PCIe x 1)	1 No or More
15	Expansion Slots (PCIe x 16)	2 Nos or More
16	USB Port	USB 2.0 - 4 Nos or More USB 3.0 - 4 Nos or More
17	Ports	VGA , HDMI / Display port
18	Monitor	19.5 inch or higher with 1600 X 900 or Higher resolution with internal speakers
19	Keyboard and Mouse	Standard keyboard and optical Mouse
20	Power supply	240 W or above
21	Power Efficiency	80% or above
22	Certificates	Energy star for given model , For Monitor - TCO 7.0 or Higher For OEM - ISO 9001:2008 or Higher
23	Warranty	3 Years onsite warranty
24	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAfee / NOD32 / eTrust / Kaspersky / eScan / Quickheal with 3 Years License

❖ **Multi-functional Printers:**

Sl No	Feature	Specification
1	Type	Multifunctional device
2	Technology	Laser
3	Paper size (Original/Image)	A4, A5, A6, B5 (JIS), Executive, Legal, Letter, Oficio (216 x 340 mm), Oficio (8.5 x 13 in), statement
4	Minimum Speed per minute In A4 size	38 PPM
5	Memory (RAM)	256 MB.
6	Duplexing feature Availability	Yes
7	Network feature Availability	Yes
8	Document feeder	DADF
9	Wi-Fi Availability	Yes
10	Processor/CPU	high processor speed of 1200 MHz
11	Control Panel	10.1 inch TFT LCD WSVGA Colour Touch Panel
12	Print Resolution	1200x1200 DPI
13	Additional Print Options for paper saving	Force Hold print, Direct Print from USB (JPEG/PDF/TIFF/XPS)
14	Tray Capacity	500 Sheets or more
15	Yield (No Of Copies)- M/C	80000 Pages per month
16	Mandatory BIS Registration	Yes
17	Scanning speed	up to 51ipm.
18	Scanning features	flexible, reusable digital formats including Searchable PDF, XPS and TIFF or JPEG formats Convenience of storing frequently printed documents on the MFD/Photocopier HDD
19	Warranty	3 Years onsite warranty





23 ↓  

❖ Laptop :

SI No	Feature	Approved Specifications
1	Screen Size	15.6 Inches
2	Maximum Display Resolution	1920x1080
3	Product Dimensions	2.4 x 38 x 25.4 cm
4	Batteries:	1 Lithium Metal batteries required. (included)
5	Processor Brand	Intel
6	Processor Type	Core i5
7	Processor Speed	1.6 GHz
8	Processor Count	4
9	RAM Size	8 GB
10	Memory Technology	DDR4
11	Maximum Memory Supported	16 GB
12	Hard Drive Size	1 TB
13	Hard Disk Technology	Serial ATA
14	Hard Drive Interface	Serial ATA
15	Audio Details	Headphones
16	Speaker Description	Dual Speakers
17	Graphics Coprocessor	Intel UHD Graphics 620
18	Connectivity Type	WLAN, Wi-Fi, Bluetooth 4.0
19	Wireless Type	802.11bgn
20	Number of USB 2.0 Ports	1 or more
21	Number of USB 3.0 Ports	2 or more
22	Number of HDMI Ports	1 or more
23	Number of Audio-out Ports	1 or more
24	Voltage	220 Volts
25	Wattage	70 Watts
26	Optical Drive Type	DVD+R DL
27	Card Reader	Secure Digital card
28	Operating System	Free DOS
29	Lithium Battery Energy Content	41 Watt Hours
30	Included Components	Laptop, Battery, AC Adapter, User Guide and Manual
31	Warranty	3 Years onsite warranty
32	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAfee / NOD32 / eTrust / Kaspersky / eScan / Quickheal with 3 Years License

❖ **Projector :**

SI No	Feature	Approved Specifications
1	Package	Projector, Remote, Power Cable, Vga Cable, Manual, Screen
2	Brightness	3200 lm
3	Light Source	277
4	Projection Ratio	4:03
5	Dynamic Contrast Ratio	15000:1
6	Zoom Ratio	1.2
7	Contrast Ratio	15000:1 Hz
8	Number of Speakers	1 or more
9	Output Per Speaker	10 W
10	Audio Type	1 or more
11	Number of VGA Ports	1 or more
12	VGA In	Vga In
13	S Video	1 or more
14	HDMI Ports	1 or more
15	USB Ports	1 or more
16	Power Supply	100-240V AC, 50/60HZ
17	Standby Power Consumption - 110 V	230 W
18	Power Consumption - 220 V	277 W
19	Standby Power Consumption - 220 V	0.26 W
20	Power Consumption - 110 V	277 W
21	Minimum Operating Temperature	30 degree C
22	Maximum Operating Temperature	95 degree C
23	Normal Noise Level	28 dB
24	Minimum Focal Length	16.7 mm
25	Maximum Focal Length	16.7 mm
26	Remote Control	Yes
27	Weight with Stand	2.4 kg
28	Warranty Service Type	On Site
29	Covered in Warranty	2 Years Warranty

Annexure -4
Karnataka Text Book Society (KTBS)

❖ **Desktop :**

Sl No	Description	Desktop Technical Specification
2	Processor	Intel Core i3-7400 (3.0GHz, 6MB cache) or AMD Ryzen3-1300 (3.5 GHz, 8MB cache) or higher
3	Chipset	Compatible chipset
4	Motherboard	OEM Motherboard with Hardware TPM 2.0
5	RAM	8 GB DDR4 2400 Mhz RAM or higher
6	Hard Drive	1 TB SATA HDD or higher
7	Optical Drive	DVD Writer
8	Audio	Integrated HD Audio with two internal speakers.
9	Ethernet	Integrated Gigabit Ethernet Connection (10/100/1000 Mbps Ethernet(auto sensing) NIC), RJ45 connector, provision for wireless connector.
10	Display Monitor	19.5" HD, Anti-glare Display or higher
11	Keyboard	USB Keyboard (Same make as PC)
12	Mouse	USB 2 button Optical Scroll mouse (Same make as PC)
13	Ports	6 USB ports or higher (minimum 2 USB 3.0), 1 Ethernet (RJ-45), 1 HDMI/display port , headphone / microphone combo jack (3.5mm)
14	Webcam & Mic	Integrated HD Webcam with Microphone
15	Certifications	For OEM : ISO 9001 : 2008 or Latest
		For PC : MS Windows, Energy Star, EPEAT
16	Operating System	Preloaded Genuine Microsoft Windows 10 Professional 64 Bit
17	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAfee / NOD32 / eTrust / Kaspersky / eScan / Quickheal with 3 Years License
18	Accessories	With required connecting cables and driver media should be supplied
19	Warranty	3 Years Onsite comprehensive warranty

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❖ Laptop:

Sl. No	Description	Approved Specification
1	Processor	Intel Core i3-7200U (2.5GHz, 3MB Cache) or AMD A10 9730 (2.8GHz, 2MB Cache) Processor or higher
2	Chipset	Compatible chipset.
3	Motherboard	OEM Motherboard with TPM 2.0
4	RAM	4GB DDR4 RAM
5	Hard Drive	1TB SATA HDD or higher
6	Optical Drive	Internal DVD Writer
7	Audio	Integrated HD Audio with Internal Speakers
8	Casing	Metal Hinges for longer durability and stability for good quality support structure
9	WLAN	802.11b/g/n and Bluetooth V4.0 or higher
10	Network Interface	Integrated Gigabit Ethernet Connection
11	Graphics	Integrated Intel HD Graphics
12	Display	14" HD (1366x768), Anti-glare, LED backlight Display or Higher
13	Input Devices	Key Board with Standard Touchpad
14	Interfaces	2x USB 3.0, 1x USB 2.0, VGA Port, HDMI Port, RJ 45 Port
15	Battery	Minimum 4 Hours Power Backup
16	Webcam	Integrated HD Webcam
17	Operating System	Preloaded Microsoft Windows 10 Pro 64 Bit
18	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAfee / NOD32 / eTrust / Kaspersky / eScan / Quickheal with 3 Years License
19	Weight	Less than 2.5Kg including battery
20	Certifications	Windows 10, FCC, Energy Star, EPEAT Certified
21	Accessories	With required accessories, connecting cables and driver Case and AC Adaptor should be supplied.
22	Warranty	3 Years Comprehensive Onsite warranty Including OS
23	Graphics card (Optional)	Additional 2GB Graphic card.

❖ **Software for Desktop Publishing:**

Slno	Particulars	Approved Specification
1	Adobe PageMaker-7 or Latest Version	Paper License in the name of Managing Director, Karnataka Text Book Society, Department of Public Instruction.
2	Adobe InDesign CS-6 or Latest Version	Paper License name of Managing Director, Karnataka Text Book Society, Department of Public Instruction
3	Photoshop CS-6 or Latest Version	Paper License name of Managing Director, Karnataka Text Book Society, Department of Public Instruction
4	Corel Draw-6 or Latest Version	Paper License name of Managing Director, Karnataka Text Book Society, Department of Public Instruction

Note :Licenses for above mentioned Softwares shall be in the name of Managing Director, KTBS Bangalore, Department of Public Instruction.



Annexure - 5
Department of Public Libraries (DPL)

❖ Laptop Specification (with Lock system)

SI No	Description	Approved Specification
1	Processor	Intel Core i3-7100 /7100T (3.9 GHz, 3 MB Cache) or AMD A10 9700 (3.5 GHz, 2 MB Cache) or Latest higher Generation
2	Chipset	Compatible chipset
3	Motherboard	OEM Motherboard with Hardware TPM 2.0
4	RAM	8 GB DDR4 2400 Mhz RAM or higher
5	Hard Drive	1 TB SATA HDD or higher
6	Optical Drive	DVD Writer
7	Audio	Integrated HD Audio with two internal speakers.
8	Ethernet	Integrated Gigabit Ethernet Connection (10/100/1000 Mbps Ethernet(auto sensing) NIC), RJ45 connector, provision for wireless connector.
9	Display	16" HD, Anti-glare Display or higher
10	Keyboard	USB Keyboard (Same make as PC)
11	Mouse	USB 2 button Optical Scroll mouse (Same make as PC)
12	Ports	6 USB ports or higher (minimum 2 USB 3.0), 1 Ethernet (RJ-45), 1 HDMI/display port , headphone / microphone combo jack (3.5mm)
13	Webcam & Mic	Integrated HD Webcam with Microphone
14	Certifications	For OEM : ISO 9001 : 2008 or Latest
		For PC : MS Windows, Energy Star, EPEAT
15	Operating System	Preloaded Genuine Microsoft Windows 10 Professional 64 Bit
16	Antivirus	Pre-Loaded with Latest version of Antivirus Symantec / MacAfee / NOD32 / eTrust / Kaspersky / eScan / Quickheal with 3 Years License
17	Accessories	With required connecting cables and driver media should be supplied
18	Warranty	5 Years onsite comprehensive warranty including warranty for Battery and Adopter
19	Power Supply	Minimum 4 Hour Back up
20	Lock for Latop	Portable Keyed Laptop Lock - Retractable or better model

❖ **MFD Multifunctional Printer :**

Sl. No.	Particulars	Approved Specification
1	Printing Method	Mono laser
2	Print Speed	Minimum 40+/-3 PPM(A4) or better
3	Print Resolution	1200 x 1200 dpi
4	Processor	600 MHz or more
5	Memory	256 MB or more
6	Print Languages	PCL 6, Postscript level 3 emulation
7	Paper Input	250 Sheets Input Tray & 50 pages bypass tray
8	Paper Output	At least 100 Sheets
9	Paper Size (Max.)	A4, Legal
10	Duplex Printing	built-in Automatic
11	Connectivity	USB 2.0 with cable; 1 Ethernet 10/100/1000T network
12	Compatible Operating Systems	Win 7 (32/64 bit), Win 8 (32/64 bit), Windows XP, Linux
13	Support print format	JPEG, PDF, Tiff
14	Warranty	Three year on site comprehensive

❖ **Bar Code Label Printer :**

Sl. No.	Particulars	Approved Specification
1	Printing Method	Direct thermal and Thermal transfer
2	Print Speed	Minimum 6 ips
3	Resolution	203 DPI
4	Max. Print Width	108 mm (4.25")
5	Max. Print Length	2,286 mm (90")
6	Label Roll Capacity	127 mm (5") OD
7	Memory	2 MB Flash
8	Interface:	Ethernet, USB, Parallel
9	Media width	24.4- 112mm
10	Media thickness	0.06-0.19 mm
11	Bundled software	Labelling software/driver sw

❖ **Bar Code Scanner**

Sl. No.	Particulars	Specification
1	Light source	650 nm Visible LASER diode
2	Depth of Field	35-200mm(upc/EAN100%,PCS-90%)
3	Scan rate	500 scans per second
4	Scan Angle	52 degrees
5	Pitch / Roll /Skew angle	65°/30°/65°
6	Minimum Bar width	5mil @PCS =90%
7	Print Contrast	30%@UPC/EAN 100%
8	System Interfaces	Keyboard, RS-232C,HID USB,Wand
9	Power Input Voltage	5 volt DC ± 10%

❖ **Tablet (Android based Tablet)**

Sl No	Description	Approved Specification
1	Processor	Minimum 1.3 GHz Quad core or Higher
2	SIM	GSM SIM Card slot
3	Network Support	2G, 3G & 4G Support
4	Display	Minimum 8/10.1" inches Capacitive touch screen or higher Minimum resolution 1280 x 800 pixels
5	Internal Storage	16 GB or Higher;
6	RAM	2 GB or above
7	Connectivity	- Mandatory EDGE / 3G & 4G Mobile data support - 802.11 b/g/n
8	Camera	Primary (Rear) - 5 MP or higher with Auto Focus Feature Secondary camera - 2 MP or higher
9	Operating System	Android 6.0 or higher
10	Audio	Internal Speaker; 3.5 mm Audio Jack
11	Location Technology	GPS & AGPS facility for capturing the location coordinates
12	Certification	BIS certification, CE&FCC
13	Battery	Minimum 4000mAh Battery or Higher
14	Bluetooth	Bluetooth v4.0 or higher
15	Warranty	3 Years warranty on site

❖ **Wi-fi Router**

Slno	Particulars	Approved Specification
1	Wi fi router 750MBPS	IEEE 802, 11 b/g/n wireless lan compatible with WPA (TKIP) and wpa2(AES) support speed upto 750 mbps and frequency of 2.4 ghz with external antenna.

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Annexure - 6

Component	Feature	K-Yan (. Integrated Teaching Device)	
		PRO Standard	UNIVERSAL
High End Computer	CPU	Intel i3 Processor	Intel Dual Core Processor
	Chipset	Intel Chipset	Intel Chipset
	Memory	4 GB RAM	4 GB RAM
	Graphics	Integrated Graphics	Integrated Graphics
	Storage	Minimum 1TB	Minimum 1TB
Advanced Projection System	Brightness	3000 SVGA ANSI Lumens (Short Throw)	3000 SVGA ANSI Lumens (Short Throw)
	Contrast Ratio	18000:1	18000:1
	Lamp Life*	4000 Hrs (Standard Mode) 3000 Hrs (Bright Mode)	4000 Hrs (Standard Mode) 3000 Hrs (Bright Mode)
In-built Interactivity		Image Processing Technology	Image Processing Technology
DVD Player	Optical Drive	DVD-RW	NA
In-Built Audio System	Audio	30W Audio Speakers with Volume Control	30W Audio Speakers with Volume Control

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