

## RAWALPINDI WOMEN UNIVERSITY RAWALPINDI

Following corrections are proposed in the tender document floated for purchase of IT equipment / Lab equipment Furniture & fixture / Transport office and stores.

### Furniture and Fixture

Following amendments may be read with tender documents:-

- a- Computer table top 6 feet with pipe of 18 gauge with powder coating, one drawer with lock.
- b- Computer chair with 2 inch wheels.
- c- Office Table with drawers' one side and cabinet on other side.
- d- Auditorium Chair shall be fixed by render.
- e- Storage cabinet with lamination.
- f- Racks for files with angle iron of 1 ½ x 1 ½ of in scoter. 22”guage and 6 selves.
- g- Center table 4 feet x 2 feet x 18 inch.
- h- Dining table height 30 inch.
- i- Sofa 4 Seater of 2+2 seats.

### Transport.

- a. With same specification “or equivalent” may be added.

### Plant and Machining / Medical and Lab Equipment.

- Photocopier life of consumables may be of standard range.
- Resolution 1200x1200 dpi Print 600x600 dpi scan

Calorimeter. Differential Scanning Calorimeter

**Baseline Flatness: (-50 to 300°C) ≤10 μW**  
**Baseline Repeatability: (-50 to 300°C) <15μW**  
**Temperature Range: -180°C to 550°C**  
**Temperature Accuracy: ±0.025°C**  
**Temperature Precision: ±0.005°C**  
**Enthalpy Precision: ±0.08%”**

Dilatometer: Sample dimension length / diameter: 0 to 25 mm / 6mm  
Material of sample holder: Fused silica, Al<sub>2</sub>O<sub>3</sub>  
Contact Force: 0.01 – 1.0 N, linear motor controlled constant sample load  
Change of length: 5000μm  
Resolution ΔL, ΔT: 1 nm, 0.05°C  
Accuracy in α: 0.01 x 10<sup>-6</sup> K<sup>-1</sup>  
**Atmosphere:** Vacuum, Inert gas, Air atmosphere control through optional gas unit with mass flow controller and vacuum unit  
**Temperature range:** RT-1100°C, RT-1500°C, RT-1700°C  
**Heating rate:** 50°C/min  
**Cooling rates:** 1100°C – RT: minimum 13 min  
1500°C – RT: less than one hour  
1700°C – RT: approximately one hour

- Vortex Italy be omitted.
- FTR May be read with diamond ATR sampling techniques with latest window USA / Europe make. Standard library.
  - Electronic Balance. Uniblock. Japan, Europe or equivalent.
  - Nano drop spectrophoto meter. “Or equivalent” be added.
  - Pipette hand set “or equivalent” be added.

- Real time PCR “or equivalent” may be added
- Horizontal Unit “or Equivalent” added.
- Simple PCR Single block be added.
- Electrophoresis Gel Type “or equivalent” added.
- PCR 3 Segment (trio) Added

**Software.**

Virtualization	8 x Socket VMware Standard Edition with 1x vCenter Standard with 3 Years Production Principal Support (Must be OLP with a Part number) Or Equivalent The proposed solution must be standing in the Leader Quadrant in (Gartner and Forrester, ETC) for the last 3 years and should have a Hardware OEM alliance. Documented proof should be provided for all requirement. Tier 1 partner and MAL from Principal (Mandatory)
Backup Solution	Veeam Backup and Replication for Windows & Linux VMs up to 10 instances with 3 Years Principal Production Support Must be OLP with a Part number) or Equivalent The proposed solution must be standing in the Leader Quadrant in (Gartner and Forrester, ETC) for the last 3 years and should have a Hardware OEM alliance. Tier 1 partner and MAL from Principal (Mandatory)

**IT Equipment.**

- Sr. No 1 Power Supply Changed to 300 W PSU or above
- Sr. No 04 Network Rack mount cable management panel & Reusable Cable Ties Microfiber Cloth Hook and Loop with International /Local Recognized Brands
- Sr. No 09 Server Machine/Rack Servers Specification updated
- Sr. No 10 Enterprise Storage Specification updated
- Sr. No 11 Firewall must be rated in ICASA Labs and Gartner report attached Report (Last 3 years) point removed
- Sr. No 12 Manageable L3 48 Port Switch Support or able to Operate with Open Day light Controller point removed
- Sr. No 13 Manageable L3 24 Port Switch Support or able to Operate with Open Day light Controller point removed
- Sr. No 14 Fiber Connectivity Single Mode Cable 10GE Supported
- Sr. No 15 Wireless Controller 802.11d removed
- Sr. No 16 Front door: tempered glass door with spring lock. Rear door: solid steel door with small round lock, optional for mesh door with spring lock. removed
- Updated a. Server Racks (For Network Communication) = 02  
 2 x 42U Server Rack with  
 2 x 16amp PDU with 8 or more connectors in each rack  
 With cable management panel  
 Note.  
 Serial No 4,5,6,11,12,13,14,15,16a will be a part of turnkey solution and quoted by single bidder.  
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 b . Server Racks (For Server/Storage ) = 02  
 2 x 42U Server Rack with 8 Port KVM with accessories and cables, 2 x 16amp PDU with 10 or more C13 connectors in each. Foldable LCD Console kit  
 With cable management panel  
 Note.  
 (Must be of same brand as per Server/Storage)  
 Serial No 9,10,16b will be a part of turnkey solution and quoted by single bidder
- Sr. No 17 Scanner Up to 600 dpi (color and mono, ADF); Up to 1200 dpi (color and mono, flatbed) Optical or above  
 Scan speed: Up to 25 ppm/50 ipm  
 Standard, 50 sheets or Above
- Sr No 20 Cat-6 RJ45 1Meter patch cords (Multi Colors) With Reusable Cable Ties Microfiber Cloth Hook and Loop
- Technical Support for 3 years

09	Server Machine/ Rack Servers	<ul style="list-style-type: none"> <li>• Server Form Factor : 1U or above</li> <li>• Processor: 2 x Intel Xeon Ice lake Series Processor Gold 12 Core or more,</li> <li>• Memory :128GB RAM,</li> <li>• SSD: 2 x 480 GB RI SSDs</li> <li>• Card: 32GB Raid-1 SD Card</li> <li>• Remote Access: Integrated Remote Access 1G port(with CAT6 15m branded cables) with Enterprise License,</li> <li>• Network Adapter: 2 x Dual port 10Gb Network Card SFP+ Transceivers with OM4 LC/LC 15m Cable, 4 x 1Gb Ethernet with CAT6 15m branded Cables, 16Gb 2-Port FC Card with Transceivers,</li> <li>• RAID controller: 2Gb Supporting RAID Level 0,1,5,6,10,50,60</li> <li>• Power Supply: 800watts Dual, Hot-plug, Redundant Power Supply (1+1)</li> <li>• Warranty: 3 years 24x7 Pro Support</li> </ul> <p>Serial No 9,10,16b will be a part of turnkey solution and quoted by single bidder</p> <p>Important Note:</p> <ul style="list-style-type: none"> <li>• Servers, Storage and Racks must be of same brand.</li> <li>• Vendor must be Tier 1 and Authorized Service delivery partner from last 3 years. (Documentary proofed from Principal required)</li> <li>• MAL from OEM is mandatory</li> <li>• Hands on training of all active equipment during Deployment</li> </ul>
10	Enterprise Storage	<p><b><u>SAN Storage = 01</u></b></p> <ul style="list-style-type: none"> <li>• Rack Mounted Mid-Range SAN Storage</li> <li>• (Supports SSD/SAS HDD/ NL-SAS)</li> <li>• Controller: Dual Controller SAN Storage</li> <li>• The storage array should support dual, redundant, hot-pluggable, active-active array controllers for high performance and reliability</li> <li>• SSD : 2 x 1.92TB RI SSD</li> <li>• Hard Disk: 14x 1.2TB 10K RPM SAS 12Gbps or higher</li> <li>• Storage shall be scalable to minimum of 240 number of SAS SFF drives.</li> <li>• Storage system shall support Enterprise SAS spinning drives, SSD and near line SAS/7.2K RPM drives.</li> <li>• Offered storage array shall also have support for FIPS 140-2 validating self-encrypted drives.</li> <li>• Offered Storage shall also have optional support for Flash cache using SSD / Flash drives. Offered storage shall support at-least 8TB Flash Cache.</li> <li>• Multi-path and load balancing software shall be provided, if vendor does not support MPIO functionality of Operating system.</li> <li>• SAN Controller Cache: 12GB Per Controller or higher</li> <li>• Ports : 4 x 16G FC ports each controller</li> <li>• FC Cables : 8 x 5m OM4 LC/LC FC cables</li> <li>• Power Supply: Redundant Power Supply</li> <li>• Warranty: 3 years 24x7</li> </ul> <p><b><u>NAS (Network Attached Storage) = 01</u></b></p> <ul style="list-style-type: none"> <li>• NAS should be rack mounted with a form factor of 1U or Above</li> <li>• One hexa Core Intel 1.9 GHz Intel Xeon Bronze 3204 or higher. NAS Controller shall be scalable to dual number of physical processors.</li> <li>• 16GB Dual Rank x8 DDR4 - 2933 CAS 21-21-21 RAM or higher, scalable to 192GB DDR4 RAM</li> <li>• Shall be supplied with minimum of 4 x 2TB drives in Raid 1+0. Offered NAS controller shall have support for higher capacity drives of 8TB.</li> <li>• Offered NAS should have redundant Power supplies</li> <li>• Shall have more than 200TB external disk scalability using SAS / SAS -NL drives by providing associated hardware whenever required.</li> <li>• Minimum 4 x 1Gbps with CAT6 15m branded cables, 2 x 10G SFP+ with Transcievers and OM4 LC/LC 15m ethernet ports.</li> <li>• ISCSI, FTP, FTPS, CIFS/SMB 3.1.1, HTTP, HTTPS, NFS 4.1,etc.</li> <li>• Offered NAS shall support Raid 0, Raid 1, Raid 1+0, Raid 5 and Raid 6 for additional disk enclosures.</li> <li>• Microsoft Windows Storage IOT 2019 - 64 bit edition ( NAS optimized ) including powered OS drivers</li> <li>• Offered NAS shall have block based De-duplication which can be enabled for all required volumes</li> <li>• Shall have web based interface to manage and monitor system health, capacity, performance, hardware events, quotas, snapshots, authentication and network services</li> <li>• Warranty: 3 years 24 x 7</li> </ul> <p>Serial No 9,10,16b will be a part of turnkey solution and quoted by single bidder</p>