



BOARD OF SECONDARY EDUCATION, KARACHI

NAZIMABAD KARACHI-75990

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No. BSE/P&P/1085/2026

Dated 20-01-2026

Notice Inviting Tender

Sealed bids are invited from interested suppliers/firms for items mentioned below:-

<u>S. No.</u>	<u>Name of Items</u>	<u>Bid Security</u>	<u>Tender Fee</u>	<u>Completion Time</u>
1.	Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Hardware LOTs)	Rs.1,400,000/- (Rupees Fourteen Lac only) (Refundable) in shape of Pay Order in the name of <i>Secretary, Board of Secondary Education Karachi</i>	Rs.2,000/- (Rupees Two Thousand only) (Non-Refundable) in shape of Pay Order in the name of <i>Secretary, Board of Secondary Education Karachi</i>	One month after issuance of contract award

Note:-

(Complete specification of above items are mentioned in bid documents)

2. ELIGIBILITY CRITERIA

- i. Tender Fee @ Rs.2,000/- (Rupees Two Thousand only) (Non-Refundable) in shape of Pay Order in the name of Secretary, Board of Secondary Education Karachi
- ii. Bid Security @ Rs.1,400,000/- (Rupees Fourteen Lac only) (Refundable) in shape of Pay Order in the name of Secretary, Board of Secondary Education Karachi
- iii. 03 years experience in the relevant field
- iv. Turn-over of last three years having a sum of minimum Rs.70,000,000/- (Rupees Seventy Million) (copy of Financial Statement/Audit Report be attached)
- v. Registration with EPADS (SPPRA)
- vi. Registration with Federal Board of Revenue (FBR), for Income Tax and Sales Tax
- vii. Registration with Sindh Revenue Board (SRB)
- viii. Manufacturer's Authorization Certificate/Letter
- ix. Compliance with technical specifications and required standards
- x. An Undertaking on Stamp Paper (Rs.200/-) as per specimen attached with Bid documents



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3. Method of Procurement: (Single Stage Two Envelope Procedure)

4. Bidding/Tender Documents:

- i. **Pre-Bid Meeting:** will be held on Thursday 05-02-2026 up to 02:00 p.m.
- ii. **Issuance:** Bid Documents will be issued from the first date of publication/hoisting to Tuesday 10-02-2026 up to 01:30 p.m.
- iii. **Submission:** Last date will be Tuesday 10-02-2026 up to 02:00 p.m.
- iv. **Opening:** will be opened on Tuesday 10-02-2026 up to 02:30 p.m.

5. Terms & Conditions:

a) Under following conditions bid will be rejected:-

- i. Conditional bids/tenders
- ii. Bids not accompanied by Tender Fee and Bid Security of required amount and form
- iii. Bids received after specified date and time
- iv. Bids of Blacklisted firms

(Detailed Terms & Conditions are mentioned in bid documents)

b) Bid Validity Period: 90 days from the date of opening of Tender.

c) Procuring Agency reserves the right to reject all or any bids subject to the relevant provisions of Sindh Public Procurement Rules-2010 (Amended 2025).

d) Purpose and Scope: Smooth examination procedures related to SSC Examinations.

6. In case any inconvenient situation created in the city or public holiday is declared by the Government on the date of opening of tender, the next official working day shall be deemed to be the last date for issuance, submission and opening of bids/tenders at the same time as mentioned.

(Convener Procurement Committee)

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**PRICE: RS.2,000/-
(NON-REFUNDABLE)**

BIDDING DOCUMENTS FOR NATIONAL COMPETITIVE BIDDING

SINGLE STAGE – TWO ENVELOPE PROCEDURE

**TENDER FOR PROCUREMENT AND INSTALLATION OF OMR, OCR,
QID & E-MARKING SOLUTION (HARDWARE) LOTS**

*IN RESPECT OF THE
IFB No.BSE/P&P/1085/2026 dated 20-01-2026*



PART ONE (FIXED)

- Instructions to Bidders (ITB)
- General Conditions of Contract (GCC)

Issued by:

(P&P Section)
Board of Secondary Education
Karachi



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Note:-

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- iii. 03 years experience in the relevant field
- iv. Turn-over of last three years having a sum of minimum Rs.70,000,000/- (Rupees Seventy Million) (copy of Financial Statement/Audit Report be attached)
- v. Registration with EPADS (SPPRA)
- vi. Registration with Federal Board of Revenue (FBR), for Income Tax and Sales Tax
- vii. Registration with Sindh Revenue Board (SRB)
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6. In case any inconvenient situation created in the city or public holiday is declared by the Government on the date of opening of tender, the next official working day shall be deemed to be the last date for issuance, submission and opening of bids/tenders at the same time as mentioned.

(Convener Procurement Committee)
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NOTE:

A pre-bid meeting will be held on Thursday 05-02-2026 at 02:00 P.M in the Meeting Room, 1st Floor, Block-B, Board of Secondary Education, Nazimabad Karachi. Minutes of the pre-bid meeting/clarifications will be uploaded on the official website of the BSEK & SPPRA (www.bsek.edu.pk & <https://portalsindh.eprocure.gov.pk/#/>), which shall be considered as the part of this Bidding Documents.

INSTRUCTIONS TO BIDDERS & GENERAL CONDITIONS OF CONTRACT

The Instructions to Bidders (ITB) and General Conditions of Contract (GCC) applied in this Contract shall be the same as per draft Bidding Documents for Goods, issued by SPPRA. For further references the same may be downloaded from SPPRA's EPADS website <https://portalsindh.eprocure.gov.pk/#/> or it may be provided from this Office if it may be demanded by the bidder. Whenever there is a conflict, the provisions hereafter shall prevail over those in the Instructions to Bidders & General Conditions of Contract. The corresponding clause number of the ITB & GCC is indicated in parentheses.

BID DATA SHEET

INTRODUCTION		
ITB 1.1	Name of Contract	Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Hardware) LOTs
ITB 4.1	Name of Procuring Agency	Board of Secondary Education Karachi
ITB 6.1	Procuring agency's address, telephone, telex, and facsimile numbers	Board of Secondary Education Nazimabad, Karachi-75990 Tel: 99260252-6 Tel: 99260079 Fax: 99260262 Website: www.bsek.edu.pk Email: pnp@bsek.edu.pk
ITB 8.1	Language of the bid	English, Urdu or Sindhi



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BID PRICE AND CURRENCY

ITB 11.2	The price shall be in Pakistani currency inclusive of all Taxes, Transportation, Material and Labour charges involved therein.
ITB 11.5	During the entire period of bid validity, the price shall be fixed and the bidder will have to supply/install the required items as per specifications and quoted rates.

PREPARATION AND SUBMISSION OF BIDS

ITB 13.3 (d)	Qualification Requirements	<ul style="list-style-type: none">• Tender Fee @ Rs.2,000/- (Rupees Two Thousand only) (Non-Refundable) in shape of Pay Order in the name of <i>Secretary</i>, Board of Secondary Education Karachi• Bid Security @ Rs.1,400,000/- (Rupees Fourteen Lac only) (Refundable) in shape of Pay Order in the name of <i>Secretary</i>, Board of Secondary Education Karachi• 03 years experience in the relevant field• Turn-over of last three years having a sum of minimum Rs.70,000,000/- (Rupees Seventy Million) (copy of Financial Statement/Audit Report be attached)• Registration with EPADS (SPPRA)• Registration with Federal Board of Revenue (FBR), for Income Tax and Sales Tax• Registration with the Sindh Revenue Board (SRB)• Manufacturer's Authorization Certificate/ Letter• Compliance with technical specifications and required standards• An Undertaking on Stamp Paper (Rs.200/-) as per specimen attached with Bid documents
ITB 15.1	Amount of bid security (refundable)	<ul style="list-style-type: none">• Rs.1,400,000/- (Rupees Fourteen Lac only) which should be submitted in shape of Pay Order in the name of <i>Secretary</i>, Board of Secondary Education Karachi and shall remain valid for a period of 28 days beyond the bid validity date.



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ITB 16.1	Bid Validity Period	90 days from the date of opening of Tender.
ITB 17.1	Number of copies	02 Copies of the Bid shall be submitted by the bidder. One soft/e-copy of bid as submitted on EPADS (SPPRA) website through file uploading method and one hard copy of the same in sealed envelope.
ITB 18.2 (a)	Address for bid submission	The office of the <i>Secretary</i> (Room No. 33), 1 st Floor, Block-B, Board of Secondary Education, Nazimabad Karachi.
ITB 18.2 (b)	IFB title and number	Title: Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Hardware) LOTs IFB No: <i>BSE/P&P/1085/2026 dated 20-01-2026</i>
ITB 19.1	Deadline for bid submission	Tuesday 10-02-2026 up to 02:00 P.M
ITB 22.1	Time, date, and place for bid opening	E-Bids duly submitted on EPADS (SPPRA) website up to <u>02:00 P.M</u> and will be opened on the same day at <u>02:30 P.M</u> at the Meeting Room of the Board, 1 st Floor, Block-B, Board of Secondary Education, Nazimabad Karachi, in presence of the bidders' representatives who choose to attend at <u>02:30 P.M</u> on Tuesday 10-02-2026
ITB 25.4 (b)	Delivery schedule	The delivery will have to be made at our site within stipulated time as mentioned in the Contract Award/Job Order. Minimum time period will be at least one month after issuance of contract award which may be increased or decreased due to demand of time/situation.



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BID EVALUATION CRITERIA

Bids of only those Bidders will be evaluated who can fulfill the Eligibility Criteria and enclose Tender Fee & Bid Security and the bid is properly submitted on EPADS (SPPRA) website. Submission of E-bid on EPADS (SPPRA) website is mandatory failing which hard copy of the same if submitted in this Office, shall not be entertained.

Shortcomings in submission of documents related to Eligibility Criteria or non-submission of Bid Security shall be rejected.

Prior to submission of bids, the bidders may obtain further information and completely satisfy themselves about the required items for which they are bidding for.

An interested bidder, who has obtained bidding documents, may request for clarification of contents of the bidding document in writing, and procuring agency shall respond to such queries in writing within three calendar days, provided they are received at least five calendar days prior to the date of opening of bid.

Bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;

Envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion;

Initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;

Envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of the procuring agency without being opened;

Procuring agency shall evaluate the technical proposal without reference to the price and reject any proposal which does not conform to the specified requirements;

No amendments in the technical proposal shall be permitted during the technical evaluation;

Financial proposals of technically qualified bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;

Financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders;

The specification offered by the bidder(s) may vary from the requirement because the requirements are mentioned on the basis of transitory survey, in such case(s) the Procurement Committee shall decide and recommend the offer(s) that may be suitable for procuring agency.



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The bidders shall submit only one rate for every item. Dual rates or alternate bid is strictly restricted/prohibited. In case a bidder has quoted more than one rate for a single item, its bid shall be rejected.

Demonstration may be made within the premises of Board for which supplier shall be liable to bring the Machines for the said purpose.

The offered products should be durable, reliable and prime quality products with Mandatory 3 Years Comprehensive Warranty for all active equipment including after sales service and replacement of all parts and the offered products should be equivalent to the prime quality standard of made in Japan products.

Cheap products of inferior, low quality or substandard shall not be accepted and the said bid shall be treated as Irresponsive and Security Money shall be forfeited and the bidder may also be blacklisted (as the case may be).

The quoted rates shall include the charges of procurement and installation till the Solution/System comes into operative condition including all Taxes, Transportation, Material, Labour, Testing/Commission and Installation charges involved therein i.e complete in all respects.

Reference to brand name, catalogue number or country where used, they should always be read with followed by the words “or at least equivalent.”

The bidder with the “Lowest Submitted Price” for complete LOT shall be liable to provide specimen/sample of items failing which the bid will not be evaluated and shall be rejected.

The specimen/sample of items as supplied by the bidders of “Lowest Submitted Price”, should must be strictly in accordance with the approved specifications, requirement and/or the specimen/sample shown by the procuring agency failing which the bid will not be evaluated and shall be rejected.

The bidder(s) shall be liable to provide documentary evidence for branded products like Dell, HP, Kodak, Fujitsu, Huawei etc., in shape of “Manufacturer’s Authorization Certificate/Letter” in case a Bidder is offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce.

The bidder with the “Lowest Evaluated Cost” but not necessarily the “Lowest Submitted Price” shall be awarded the Procurement Contract.



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Technical Eligibility (Passing Score 70%)

COMPANY PROFILE	
Technical Parameter	Points
Year of Establishment of the Firm.	Max Points = 50
Document Required: Company Profile/documentary evidence/ proof should be attached in the Technical bid for verification.	10 Years or Above: 50 Above 06 & Below 10 Years: 40 Above 03 & Below 06 Years: 20 Below 03 Years: 0
The Vendor should have major presence/ strength skills in more than one city of Pakistan	Max Marks = 50 In 01 City = 25 In more than 01 City = 50
Office in Karachi (will be physically verified by the procurement committee team)	Max Marks = 100

COMPLIANCE WITH SCOPE OF WORK	
Technical Parameter	Points
Technical Compliance of the relevant LOT as mentioned in each LOT's specifications	Max Points = 150 Yes = 150 No = 0

RELEVANT EXPERIENCE	
Technical Parameter	Points
<i>Supply of IT-Equipment with any Public, Govt. Organization, or Large Corporate/Private Sector Client.</i>	Max Points = 100 3 or above = 100 2 = 50 1 = 10 Nil = 0
Active SLA for IT equipment with any Public or Govt. Organization must attach PO/Agreement	Max Marks = 100



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SPECIALIZATION (Only for Lot 1)	
Technical Parameter	Points
Should have Valid ISO For ICT Product Selling: • ISO 9001 • ISO 27001	Max Marks = 200 100 marks each

FOR LOT 1

TOTAL MARKS: 750	PASSING MARKS: 525
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FOR LOT 2 to 4

TOTAL MARKS: 550	PASSING MARKS: 385
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SECTION III.

SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

1. DEFINITIONS (GCC CLAUSE 1)

1)	GCC 1.1 (g)	The Procuring agency is:	Board of Secondary Education Karachi.
2)	GCC 1.1 (h)	The Procuring agency's country is:	Islamic Republic of Pakistan.
3)	GCC 1.1 (j)	The Project Site is:	Same as GCC 1.1(g) mentioned above.

2. COUNTRY OF ORIGIN (GCC CLAUSE 3)

All countries and territories as indicated in Part Two Section VI of the bidding documents, "Eligibility for the Provisions of Goods, Works, and Services in Government-Financed Procurement".

3. PERFORMANCE SECURITY (GCC CLAUSE 7)

1)	GCC 7.1	The amount of performance security, as a percentage of the Contract Price, shall be 10 (Ten) percent of the Contract Price which should be submitted in shape of Pay Order/Bank Guarantee in the name of <i>Secretary, Board of Secondary Education Karachi</i> .
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4. RESOLUTION OF DISPUTES (GCC CLAUSE 28)

The arbitration shall be conducted in Karachi, Pakistan, in accordance with the Arbitration Act 1940. The decision of the Arbitrator shall be final and binding.

5. GOVERNING LANGUAGE (GCC CLAUSE 29)

1)	GCC 29.1	The Governing Language shall be:	English.
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6. NOTICES (GCC CLAUSE 31)

GCC 31.1 — Procuring agency's address for notice purposes:

Office of the Assistant Secretary (P&P) Room No. 40, 1st Floor, Block-B, Board of Secondary Education, Nazimabad Karachi.

7. PENALTY

- 1) Preferred penalties according to the issue/subject may be imposed upon the Supplier(s) such as:
 - i. Rejection of the unsatisfactory Supplied material/Job done
 - ii. Initiation of Blacklisting proceedings in accordance with SPPRA Rule 35.
 - iii. Liquidated damages shall be adjusted as per Standard SPPRA rules and **Contract Act 1872** (Section 74 – Compensation for Breach).
 - iv. Liquidated damages shall be 0.1% of the contract price per day of delay, up to a maximum of 10% of the total contract value.
 - v. Forfeiting of whole Bid/Performance Security amount

Anyone or more than one from the aforesaid penalties may be imposed upon the Supplier(s) in the following cases:

- a) In case of transgression/deviation of the time given in the Contract Award
- b) In case of transgression, deviation, mistake or low quality found in the Supply, after approval of the final specimen/proof
- c) In case the rates of a Tender in certain item or items are approved and the Bidder backs out of his commitment on any pretext or fails to supply the material in time or in the required quantity or quality



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8. SUBJECT TO RELEVANT SPPRA RULES, THE COMPETENT AUTHORITY RESERVES THE RIGHT TO:

- (a) divert/distribute a particular work among different Bidders on the lowest approved rate(s) in the interest of the office due to demand of time/situation.
- (b) accept or reject all or any bid.
- (c) increase or decrease quantity without any notice at any time/stage subject to ITB Clause 29.
- (d) to recast and amend the contents of the Software at any stage before final proof is Okayed/approved.
- (e) of accepting whole or any part of the Tender for portion of the quantity offered by the Bidders on quality-cum-rate basis. The Contract Award will be given to one or all Bidders for part/or full supply against the lowest rates & quality approved by the Board.



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9. SPECIAL CLAUSE (TERMS & CONDITIONS)

- 1) Under following conditions bid will be rejected:-
 - i. Conditional bids/tenders
 - ii. Bids not accompanied by Tender Fee and Bid Security of required amount and form
 - iii. Bids received after specified date and time
 - iv. If more than one rate for a single item has been quoted
 - v. Bids of Blacklisted firms
- 2) Bids of only those Bidders will be evaluated who can fulfill the Eligibility Criteria and enclose Tender Fee & Bid Security and the bid is properly submitted on EPADS (SPPRA) website. Submission of E-bid on EPADS (SPPRA) website is mandatory failing which hard copy of the same if submitted in this Office, shall not be entertained.
- 3) Shortcomings in submission of documents related to Eligibility Criteria or non-submission of Bid Security shall be rejected.
- 4) Prior to submission of bids, the bidders may obtain further information and completely satisfy themselves about the required items for which they are bidding for.
- 5) An interested bidder, who has obtained bidding documents, may request for clarification of contents of the bidding document in writing, and procuring agency shall respond to such queries in writing within three calendar days, provided they are received at least five calendar days prior to the date of opening of bid.
- 6) Bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- 7) Envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion;
- 8) Initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;
- 9) Envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of the procuring agency without being opened;
- 10) Procuring agency shall evaluate the technical proposal without reference to the price and reject any proposal which does not conform to the specified requirements;



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- 11) No amendments in the technical proposal shall be permitted during the technical evaluation;
- 12) Financial proposals of technically qualified bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- 13) Financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders;
- 14) The specification offered by the bidder(s) may vary from the required items because the requirements are mentioned on the basis of transitory survey, in such case(s) the Procurement Committee shall decide and recommend the offer(s) that may be suitable for procuring agency.
- 15) The bidders shall survey the SITE as such the equipment list and quantities are approximately stated. Actual survey by the bidder is mandatory because if additional quantity of any item is needed or any item may be decreased/reduced, it shall be managed/adjusted by the bidder within original bid price as such no extra payment will be paid after submission of the bids.
- 16) The bidders shall submit only one rate for every item. Dual rates or alternate bid is strictly restricted/prohibited. In case a bidder has quoted more than one rate for a single item, its bid shall be rejected.
- 17) Demonstration of the Machines may be made within the premises of Board for which supplier shall be liable to bring the Machines for the said purpose.
- 18) The offered products should be durable, reliable and prime quality products with Mandatory 3 Years Comprehensive Warranty for all active equipment (Servers, Switches, Firewalls) including after sales service and replacement of all parts and the offered products should be equivalent to the prime quality standard of made in Japan products.
- 19) Cheap products of inferior, low quality or substandard shall not be accepted and the said bid shall be treated as Irresponsive and Security Money shall be forfeited and the bidder may also be blacklisted (as the case may be).
- 20) The quoted rates shall include the charges of procurement and installation till the Solution/System comes into operative condition including all Taxes, Transportation, Material, Labour, Testing/Commission and Installation charges involved therein i.e complete in all respects.



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- 21) Reference to brand name, catalogue number or country where used, they should always be read with followed by the words “or at least equivalent.”
- 22) The bidder with the “Lowest Submitted Price” for complete LOT shall be liable to provide specimen/sample of items failing which the bid will not be evaluated and shall be rejected.
- 23) The specimen/sample of items as supplied by the bidders of “Lowest Submitted Price”, should must be strictly in accordance with the approved specifications, requirement and/or the specimen/sample shown by the procuring agency failing which the bid will not be evaluated and shall be rejected.
- 24) The bidder(s) shall be liable to provide documentary evidence, specially for branded products like Dell, HP, Kodak, Fujitsu, Huawei etc., in shape of “Manufacturer’s Authorization Certificate/Letter” in case a Bidder is offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce.
- 25) If a bid is found “Lowest Submitted Price” but the specimen/samples provided by the said bidder are found inferior, low quality, substandard products, not upto the requirement or fails to provide “Manufacturer’s Authorization Certificate/Letter” (where required), in such case, the said bid shall not be evaluated and may be rejected, Bid Security of the said bidder shall be forfeited and he may also be blacklisted.
- 26) The bidder with the “Lowest Evaluated Cost” but not necessarily the “Lowest Submitted Price” shall be awarded the Procurement Contract.
- 27) The bidder shall supply the article(s) as per approved specifications mentioned in the Contract Award. The article(s) not found in conformity with the approved specifications shall be rejected at the risk & cost of the Bidder.
- 28) The Contract Award may be assigned at any time during the period of bid validity.
- 29) The successful bidder will have to deposit Performance Security @ 10% of the Contract price.
- 30) The amount of Performance Security is in addition to the amount of Bid Security which should be deposited by the successful bidder(s). Validity of performance security shall extend to cover defects liability period and subject to final acceptance by the procuring agency.
- 31) Placement of Contract Award will be subject to payment of Performance Security.



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- 32) The material shall be delivered to Storekeeper, through the concerned Officers as the case may be, against delivery challan in triplicate along with samples of material in duplicate. Two copies of the bills and challan shall be retained by the Storekeeper while the third copy shall be returned to the supplier for his own record.
- 33) The delivery will have to be made at our site within stipulated time as mentioned in the Contract Award. Minimum time period will be at least one month after issuance of contract award which may be increased or decreased due to demand of time/situation.
- 34) The bidder is liable to conduct comprehensive operational training for staff members to ensure smooth transition and efficient utilization of the system.
- 35) SPPRA Rules-2010 (Amended 2025) shall strictly be followed.

10. EQUIVALENCY OF STANDARDS AND CODES

Reference to brand name, catalogue number or country where used, they should always be read with followed by the words “or at least equivalent.”

Reference to the required weight/grammage where used, a difference of plus/minus 05 should be tolerated.



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SECTION-IV.

SCHEDULE OF REQUIREMENTS

SCHEDULE OF REQUIREMENTS:

The delivery will have to be made at our site within stipulated time as mentioned in the Contract Award. Minimum time period will be at least one month after issuance of contract award which may be increased or decreased due to demand of time/situation.

MODE OF PAYMENT

MODE OF PAYMENT:

The currency of payment shall be Pak. Rupees.

The Supplier's request(s) for payment shall be made to the Board in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and Services performed, and by documents submitted, and upon fulfillment of other obligations stipulated in the Contract.

Payment shall be made 80% on Delivery of Hardware of the Contract Price of awarded items to Store(s) within thirty (30) days on submission of claim supported by Acceptance Certificate from the Authorized Officers of the Board declaring Goods have been delivered and 20% on Successful Installation, Commissioning, and Sign-off that all contracted services have been performed.

Part payment on part supply may be allowed only in case when permitted/approved by the Chairman BSE, Karachi.



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CONTRACT AGREEMENT

THIS AGREEMENT made the _____ day of _____ 20 _____ between Board of Secondary Education Karachi, of Islamic Republic of Pakistan (hereinafter called "the Procuring agency") of the one part and M/S _____ of Karachi, Pakistan (hereinafter called "the Supplier") of the other part:

WHEREAS the Procuring agency invited bids for certain goods and ancillary services, viz., Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Hardware) LOTs (complete specification as mentioned in Bid Documents) and has accepted a bid by the Supplier/Bidder for the supply of those goods and services in the sum of approximately Rs. (in figure) _____ (Rupees _____ (in words) only) (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Bid Form and the Price Schedule submitted by the Bidder;
 - (b) the Schedule of Requirements;
 - (c) the Technical Specifications;
 - (d) the General Conditions of Contract;
 - (e) the Special Conditions of Contract; and
 - (f) the Procuring agency's Notification of Award.
 - (g) the Terms & Conditions laid down in Bidding Documents



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3. In consideration of the payments to be made by the Procuring agency to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Procuring agency to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Procuring agency hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by

Convener of Procurement Committee
Board of Secondary Education Karachi

Signed, sealed, delivered by

(for the Supplier/Bidder)



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INTEGRITY PACT

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS/CONTRACTORS/CONSULTANTS.

Contract Number: BSE/P&P/xxxx/2026 Dated: xx-xx-2026

Contract Value: _____

Contract Title: Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Hardware) LOTs

M/S _____, hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Sindh (GoS) or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoS) through any corrupt business practice.

Without limiting the generality of the foregoing, M/S _____, represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit, in whatsoever form, from Procuring Agency (PA), except that which has been expressly declared pursuant hereto.



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M/S _____, certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with PA and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

M/S _____, accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to PA under any law, contract or other instrument, be voidable at the option of PA.

Notwithstanding any rights and remedies exercised by PA in this regard, M/S _____, agrees to indemnify PA for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to PA in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by M/S _____, as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit, in whatsoever form, from PA.

Convener of Procurement Committee
Board of Secondary Education Karachi

Supplier/Bidder/Contractor



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UNDERTAKING

Title of Tender: Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Hardware) LOTs

I _____ s/o _____ bearing CNIC # _____ holding the post/designation of _____ in the firm named _____ having NTN # _____ STRN # _____ SRB # _____ (if any), do hereby solemnly state:-

- i) that the above named firm has never been Blacklisted in any Government, Semi-Government, Autonomous body or any other organization.
- ii) that I/we have carefully read & understood the Terms & Conditions and specification of the required item(s)/article(s)whatever has been stated herein the Bidding Documents and abide to the same.
- iii) that I/we have briefly seen/understood all the required item(s)/article(s) for which I/we am/are bidding for, and ensure to supply the item(s)/article(s) exactly as per requirement.

Signature: _____

Name: _____

Designation: _____

Stamp: _____

Date: _____



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SECTION-V.

TECHNICAL SPECIFICATIONS

TECHNICAL PROPOSAL

Technical Document:
Storage, Servers & Desktop Computers

LOT 01 (A)

(FOR LOT 01, PROCUREMENT MAY BE MADE EITHER FROM LOT 01(A) OR LOT 01(B), SUBJECT TO SUITABILITY AND FEASIBILITY)

Title: Procurement of High-End Servers, Storage, Network Infrastructure, Desktop Computers, and Training.

1. High-End Server Specifications Qty: 02

SERVERS REQUIREMENT	
Parameter	Specification
Server Type	Rack-Mount
Form Factor	1U or 2U, minimum 8 HDD bays (SAS/SATA supported)
Processor	2 x Intel® Xeon® Gold Series (5th Gen or equivalent), ≥ 20 Cores, ≥ 2.4 GHz Base.
Memory	Memory: 256 GB DDR5 ECC RDIMM, minimum 4800 MT/s, populated across a minimum of 8 DIMM slots for optimal memory bandwidth. Memory must be expandable to at least 512 GB without replacing existing modules
Hard Drives	2×600 GB SAS 12G, 10K RPM, Hot-Plug, 2.5" 3×2.4 TB SAS 12G, 10K RPM, Hot-Plug, 2.5"
RAID Controller	Hardware RAID, ≥ 2 GB cache, supports RAID 0,1,5,6,10
Network Interfaces	Network Interfaces: Each server shall include a minimum of 2×25 GbE SFP28 ports for primary storage and inter-server communication, plus 2×10 GbE SFP+ ports for management and backup networks. All network interfaces shall support SR-IOV, RDMA/RoCE v2, and hardware offload capabilities. Additionally, 1×1 GbE RJ45 port shall be provided for out-



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	of-band management (iLO/iDRAC/BMC)
Fiber Channel	[Optional] 2 × 16Gb FC Switches with minimum 24 ports each, supporting FC-SW zones and fabric services. Each server shall be equipped with dual-port 16Gb FC HBAs if FC connectivity is selected.
Optical Drive	DVD+/-RW, SATA interface; internal or ultraslim
Power Supply	Dual redundant hot-plug (Titanium/Platinum); AC 240V or HVDC
Remote Management	Built-in controller with active license
Server Management	Local & remote monitoring, pre-failure alerts, diagnostics
Accessories	Rack mount kit with cable management, power cables (C13/Din Rail), optional 32" LED Monitor/TV (HDMI)
Operating System	Microsoft Windows Server 2025 Datacenter (OEM) OR 2022 Datacenter (OEM)
Warranty	Mandatory 3 Years Comprehensive Warranty for all active equipment (Servers, Switches, Firewalls)

2. Dedicated Storage (SAN) Storage Qty: 01

Parameter	Specification
Controllers	Dual-Controller SAN with Automated Tiering license included. Total Usable Capacity: ≥ 50 TB.
Front-End Ports	8/16/32 Gbit/s FC/FC-NVMe
Management Interface	GUI or CLI/API support
Performance	Intelligent/AI-enhanced algorithms for optimization
RAID Levels	RAID 5,6, RAID-TP
Chassis	2U, dual controller, SAS-based
Cache	Cache Memory: Minimum 256 GB mirrored write cache (128 GB per controller). The storage system shall deliver the following minimum performance benchmarks measured with a 70% read / 30% write workload at 8KB block size: minimum 100,000 IOPS sustained, maximum 2ms average latency for read operations, maximum 3ms average latency for write operations. Bidders shall provide datasheet evidence that the proposed configuration meets these requirements.
Host Connectivity	4 × 10 Gb Ethernet OR Smart I/O module (SFP+/16 Gb FC)
Storage Drives	Tier 1: Active Tier (SSD) - For Current Year & DB Role: Holds the 25TB of active exam data + SQL Databases. Capacity: ~25 TB Usable. Hardware: Qty 8 x 3.84 TB SAS SSDs (RAID 5/6).



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	Tier 2: Archive Tier (HDD) - For Previous Year Role: Holds the 25TB of historical read-only data. Capacity: ~25 TB Usable. Hardware: 5 × 8 TB NL-SAS 7.2K RPM HDDs configured in RAID 6 Raw Capacity: 40 TB, Usable Capacity after RAID 6: ~24 TB
Operating Conditions	10% to 90% RH
Power & Cooling	Redundant modules
Security & Reliability	SAS 3.0 or equivalent backend, high availability, fault tolerance, multipath failover
Virtualization Support	VMware, Hyper-V compatibility
Scalability	Supports future drive/interface expansion
Warranty	Mandatory 3 Years Comprehensive Warranty for all active equipment (Servers, Switches, Firewalls)

3. Dedicated Backup Server Qty: 01

- Purpose: Backup storage for multiple databases, including CRM, PBX, Agent Apps, and Recording Systems
- Performance: $\geq 600/510$ MB/s sequential read/write
- Type: Dedicated Backup Server (2U).
- CPU/RAM: 1 x Intel Xeon Silver, 32GB RAM.
- Storage: 12 x 10TB HDDs (RAID 6) = ~100TB Usable.
- Enterprise backup solution (Veeam Backup & Replication or equivalent) with the following minimum capabilities and licensing:
- — License Type: Socket-based or capacity-based license covering all production servers and storage (minimum 4 CPU sockets or 50 TB protected capacity)
- — Features Required: Application-aware backup for Microsoft SQL Server, instant VM recovery, backup copy jobs for offsite replication readiness, encryption of backup data at rest and in transit, centralized management console
- — Recovery Objectives: Solution must support Recovery Time Objective (RTO) of 4 hours for full server restoration and Recovery Point Objective (RPO) of 1 hour for all production workloads
- — Retention: Solution must support retention policies of minimum 30 daily, 12 monthly, and 3 yearly restore points
- Licensing Term: Perpetual license with 3-year support and maintenance included



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4. Network Switch Qty: 02

Parameter	Specification
Type	Enterprise-grade Layer 2/Layer 3 managed switch
Ports	Minimum 24 × 10GbE SFP+ ports plus 4 × 25GbE SFP28 uplink ports
Switching Capacity	Minimum 24 × 10GbE SFP+ ports plus 4 × 25GbE SFP28 uplink ports
Forwarding Rate	Minimum 1,200 Mpps
Packet Buffer	Minimum 16 MB shared buffer memory
Latency	Maximum 1 microsecond port-to-port
Layer 3 Features	Static routing, OSPF, VRRP/HSRP, Policy-Based Routing
Layer 2 Features	802.1Q VLANs (minimum 4,000), RSTP/MSTP, LACP/MLAG, Jumbo frame support (9,216 bytes)
Management	SNMPv3, SSHv2, HTTPS, RADIUS/TACACS+ authentication, sFlow/NetFlow
Redundancy	Dual hot-swappable power supplies, dual hot-swappable fans
Stacking/Chassis	Switches must support virtual stacking or chassis clustering for unified management
Cabling	Vendor shall supply 24 × 10GbE SFP+ SR transceivers, 8 × 25GbE SFP28 SR transceivers, and appropriate fiber patch cables (OM4 multimode) for all server and storage connections per switch. Additionally, supply 20 × Cat6A patch cables (2m length) per switch for management and desktop connectivity
Warranty	Minimum 3 years comprehensive warranty including advance hardware replacement (next business day) and software updates. Vendor must have authorized service presence in Karachi.
Energy Efficiency	Must be energy-efficient

5. KVM with LED Display Qty: 01

Parameter	Specification
KVM	8-port rackmount KVM switch, supports VGA/SVGA/USB
Video Resolution	Up to 2048×1536
Monitor	22-inch LED or latest



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6. Desktop Computers Qty: 15

Parameter	Specification
Processor	Intel Core i7, 14th Generation or later, minimum 8 performance cores
RAM	16 GB DDR5-4800 in dual-channel configuration, expandable to 64 GB
Storage	512 GB NVMe SSD, minimum 3,500 MB/s sequential read
Graphics	Integrated Intel UHD Graphics or better
Operating System	Windows 11 Professional OEM (64-bit)
Display	24-inch IPS LED monitor, 1920×1080 resolution minimum, HDMI and DisplayPort inputs
Peripherals	USB keyboard and optical mouse
Form Factor	Small Form Factor (SFF) or Mini Tower
Expansion	Minimum 1 × PCIe x16 slot, 2 × USB 3.2 front ports, 4 × USB rear ports
Quality Requirements	Manufacturer must have direct presence in Pakistan with authorized service centers in Karachi. System must carry minimum 3-year onsite warranty from manufacturer. System must be EPEAT Gold certified or equivalent environmental certification
Reference Brands (or equivalent)	Systems meeting these specifications are available from major manufacturers including Dell, HP, Lenovo, and Fujitsu



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LOT 01 (B)

(FOR LOT 01, PROCUREMENT MAY BE MADE EITHER FROM LOT 01(A) OR LOT 01(B), SUBJECT TO SUITABILITY AND FEASIBILITY)

Turnkey Solution for HCI, File Storage and Backup Solution

Include following software and license with 3 years 5X9 NBD support of below mentioned HCI NODES (Qty:03 Nodes) and 1 Backup Server Node

1. Executive Summary:

This document provides a complete turnkey HCI solution including 3 HCI nodes, 1 backup server, network switches, firewall, air conditioning, and all necessary software licenses. The solution is designed to handle OMR scanning and e-Marking workloads efficiently while providing high availability, security, and scalability for future growth.

2. Architecture Overview

The proposed solution includes:

- 3 x HCI Nodes (Compute + Storage + Virtualization)
- 1 x Backup Server Node for VM and data backups
- Total Cluster Usable Capacity: ≥ 50 TB.
- Enterprise Network Switches (Main + Backup)
- NGFW Firewall for security and inspection
- Smart Rack with PDUs
- Air Conditioning to maintain optimal environment (Optional)

- a) HCI software must contain a single console for automation, service provisioning, troubleshooting & management
 1. General Requirements
 2. Virtualization Management
 3. Virtualization Hypervisor
 4. Storage virtualization
 5. Backup Server
 6. Network Switches
 7. Network Firewall



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3. HCI Cluster Configuration: 3 × HCI Nodes (minimum)

Rationale for 3-Node Minimum: A 3-node HCI cluster with RF2 (Replication Factor 2) data protection can tolerate a single node failure while maintaining full data availability. During normal operations, data is mirrored across two nodes, and the cluster can automatically rebuild redundancy when a failed node is replaced. For the examination processing workload where system availability is critical during SSC examination periods, 3 nodes provides an appropriate balance of fault tolerance and cost.

4. General Requirements:

- a) The hyper-converged hardware servers are required to be of the same brand.
- b) The HCI computing virtualization software, storage virtualization SDS software, and network virtualization are required to be of the same brand and pre-installed on quoted servers by Principle/OEM to ensure functional reliability, compatibility, and safety.
- c) The computing and storage software in HCI is required to be deployed on bare metal, and the hyper-converged platform can be built without installing a storage controller on the virtual machine to guarantee the best performance.
- d) Socket Based License for 4 Sockets HCI Servers + 2 Sockets Virtualization for Backup Server.
- e) Proposed Solution Must Quote Perpetual Software License with 3 Years Support and Service.

5. Virtualization Management:

- a) Proposed Solution must provide High Availability / Redundancy for Virtualization Management Platform.
- b) Proposed Solution must Support Management for Existing Virtual Machines on VMware Platform for single window management.
- c) Proposed Solution must support to create and manage local Users with Role Based Access and Permission Control.
- d) Proposed Solution must provide Web Bowser based Management Console.
- e) Must support and provide three types of consoles: SPICE, VNC, and SPICE+VNC. The SPICE protocol can add an SSL encryption channel.



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- f) Proposed Solution must provide complete visibility and centralized management / control of the Virtualization Platform.
- g) Proposed Solution must provide capability to scale up to minimum of 500 plus nodes or more.
- h) Support to analyze the usage of historical resources of virtual machines, host, and support for planning and decision-making.
- i) Provide P2V, V2V migration tool. It supports the industry's mainstream operating systems, public cloud platforms, and virtualization platforms. The different platforms should include but not limited to the migration from VMware, Huawei, Hyper-V and other platforms.

6. **Virtualization Hypervisor:**

- a) Virtualization Platform: Nutanix AHV, Microsoft Azure Stack HCI, or Proxmox VE
 - i) Requirement: Selected platform must include data migration tools supporting import of existing VMware VMs without extended downtime
 - ii) Licensing: All necessary licenses for compute virtualization and software-defined storage included for 3-year term minimum
 - iii) Support: Enterprise-grade support with 4-hour response time SLA included
 - iv) Proposed Solution must provide a Solution that should be highly redundant providing capability for the VMs to restart on another node in case of any Node failure in the Cluster.
- b) Proposed Solution must provide VM Snapshot capability including Memory-Level to revert back to previous point in time in case a failure or system error occurs.
- c) Proposed Solution must provide VM Clone capability for creating cloned instances from source VM for testing or any other purposes.
- d) Proposed Solution must provide VM vMotion/live migration capability to live migrate VMs to any nodes in the Cluster without any downtime.
- e) Proposed Solution must provide the capability to hot-add resources including vCPUs and Memory real-time based on VM contention.



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- f) Proposed Solution must provide automated Resource Scheduling and Load Balancing capability for balanced performance on all nodes across the cluster.
- g) Proposed Solution must provide Distributed Switch capability to configure and administer switching for the entire Cluster.
- h) Proposed Solution must provide Hardware Health Check capability to Monitor CPU, Memory, Network Interface Card, Hard Drive and RAID Controller etc.
- i) Support Terraform Scripting on Hypervisor for Automation.
- j) The Hypervisor must Support Boot from SAN Option to utilize the feature if required.
- h) HCI Storage Architecture
 - i) Hybrid Storage Support: The HCI platform must natively support mixed media types (SSD and HDD) within the same cluster with automated data tiering
 - ii) Tiering Behavior: Hot data (frequently accessed) shall automatically reside on SSD tier; cold data (infrequently accessed) shall automatically migrate to HDD tier without manual intervention
 - iii) Tiering Granularity: Data tiering shall operate at sub-LUN granularity (block or extent level, not entire VM level)
 - iv) Performance Tier (SSD): Minimum 23 TB usable capacity, minimum 50,000 IOPS at 4KB random read
 - v) Capacity Tier (HDD): Minimum 25 TB usable capacity — Data Protection: RF2 (Replication Factor 2) or equivalent, providing tolerance for single drive or single node failure
 - vi) Supported Platforms: Nutanix, VMware vSAN, Azure Stack HCI, or equivalent platforms demonstrably supporting these hybrid tiering requirements
- i) Backup Storage Requirements:
 - i) Primary Data to Protect: Approximately 50 TB across HCI cluster
 - ii) Backup Retention Policy:
 - a. Daily backups: Retain 30 days
 - b. Weekly backups: Retain 12 weeks
 - c. Monthly backups: Retain 12 months
 - d. Yearly backups: Retain 3 years
 - iii) Change Rate Assumption: 5% daily change rate for incremental backups
 - iv) Calculated Storage Requirement: With incremental-forever backup methodology and the above retention, approximately 80-100 TB backup storage is required



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- v) Backup Server Storage: 12×10 TB SATA HDDs in RAID 6 providing ~ 100 TB usable capacity
- vi) Growth Headroom: This configuration provides approximately 20% headroom for data growth over 3-year warranty period

6. Storage Virtualization:

- a) Proposed Solution must provide SSD based Read Caching and Write Buffer capability to improve the performance of the I/O.
- b) Proposed Solution must provide Automated Data Rebuilding capability to restore redundancy in case of any Disk or Node Failure.
- c) Supports flexibility of having at least 2 to 5 copies of data.
- d) Proposed Solution must provide SSD based Read Caching and Write Buffer capability to improve the performance of the I/O.
- e) Proposed Solution must provide Data Balancing capability to more evenly distribute the data across the devices to achieve a balanced distribution of resources.

7. Backup Server:

- a) Proposed Solution must be fully Compatible with Compute Hypervisor.
- b) Proposed Solution must provide the capability to take full / Incremental level VM and application - level Backups.
- c) Proposed Solution must provide Automated Scheduling for Backups based on Minutely, Hourly, Daily, weekly etc. scheduling.
- d) Proposed Solution must support to configure Internal Virtual Storage, External SAN or NAS to be Backup repository for Storing Virtual Machine Backups.
- e) Proposed Solution must support Industry's common storage protocols such as iSCSI, FC, NFS and support storing on Tape Library.
- f) Proposed Solution will not be limited to specific number of VMs and will support unlimited number of VMs for future scalability.



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8. Network Switches:

- a) Proposed Solution must be along required Network Switches.

9. Network Firewall:

- a) The proposed product shall support robust GUI configurations of both IPv4 and IPv6 firewall policies.
- b) The proposed products should have onboard SSD internal storage for storage of logs, event etc.
- c) The proposed product must be based on hardware architecture for Security features inspection (NG Firewalling, SSL/TLS inspection, IPS, Antimalware etc) in the hardware.
- d) The proposed product must be recognized as a Leader in the latest Gartner Magic Quadrant for Enterprise Network Firewalls.
- e) The proposed system shall minimally provide management access through:
 - a) GUI using HTTP or HTTPs access
 - b) CLI console using console port, SSHv2, telnet or from GUI console
- f) The administrator authentication shall be facilitated by a local database, PKI & remote services such as Radius, LDAP and TACACS+.
- g) The proposed product should be able to facilitate administration audits by logging detailed activities to event log - management access and also configuration changes.
- h) The proposed product shall have the ability to interconnect discrete security solutions into an integrated whole to detect, monitor, block, and remediate attacks across the entire attack surface.
- i) Administrators shall be able to configure both IPv4 and IPv6 DHCP service on an interface of the proposed product.
- j) Administrators shall be able to configure multiple loopback interfaces on the proposed product.
- k) Administrators shall be able to group interfaces, both physical and virtual, into zones that simplifies the creation of security policies.



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- l) The proposed product shall support static routing and policy-based routing.
- m) The proposed product shall support Open Shortest Path First (OSPF) and Border Gateway Protocol (BGP) for both IPv4 and IPv6.
- n) The proposed product must support active-passive (failover HA), active-active (load balancing HA) and Clustering.
- o) The proposed product shall support the upgrade of the firmware without interrupting communication through the cluster.
- p) The proposed product shall support various QoS (quality of service) techniques, including: Traffic policing, Traffic shaping and Queuing.
- q) The proposed product shall support clientless and client-based SSL Remote Access VPNs.
- r) The proposed product shall support IPsec based Remote Access VPNs.
- s) The proposed product shall support both Route based and policy-based site to site IPsec VPNs.
- t) The proposed product shall provide Secure sockets layer (SSL) content scanning and inspection abilities that allow organizations to apply antivirus scanning, application control, web/URL filtering, and IPS inspection to encrypted traffic.
- u) The proposed product shall provide the ability to exempt web sites from SSL scanning by site reputation, address, category, or using a whitelist.
- v) The proposed product shall support file sanitization feature where exploitable content (within PDF and Microsoft Office files) can be removed and replaced with content that is known to be safe.
- w) The proposed product shall support Advanced Malware Protection for proactive detection and prevention against known and unknown threats.



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- x) The proposed product shall provide ability to allow/monitor, block and quarantine attachments or downloads after malware detection using various technologies:
 - | a) Malware signature database.
 - b) External file analysis with integration with on-prem or cloud-based sandbox service.
 - c) File checksums query using cloud-based malware database.
- y) The proposed product shall be capable of blocking Botnet server communications.
- z) The proposed product shall also be able to block graywares and mobile malwares.
- aa) The proposed product shall support category based dynamic web filtering by querying real-time cloud-based categorization database.
- ab) The proposed product shall provide ability to use local categories (that override the cloud-based database rating) and remote categories (external URL list) as part of the URL rating function.
- ac) The proposed product shall detect over 4,000+ applications for Application visibility and Control.
- ad) The proposed product shall support custom application detection and control.
- ae) The proposed product's IPS engine shall offer:
 - | a) Signature based detection using real time updated database.
 - b) Anomaly based detection that is based on thresholds.
- af) The proposed product's IPS database shall have over 10,000+ up-to-date signatures and should support custom IPS signatures. A signature can be selected by searching for its corresponding CVE-ID (if applicable).
- ag) The proposed product shall provide the ability to apply DNS category filtering to control user access to web resources.
- ah) The proposed product shall allow administrator to prevent sensitive data from leaving the network. Administrator shall be able to define sensitive data patterns, and data matching these patterns that will be blocked and/or logged when passing through the unit.



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- ai) The proposed product shall support virtual firewalls that divide the Firewall into two or more virtual units that function independently.
- aj) The proposed system shall provide explicit web proxy capabilities for proxying IPv4 and IPv6 HTTP and HTTPS traffic. Security components such as AV scanning, web filtering, IPS, application control, DLP and SSL/SSH inspection can be applied to proxied traffic within the system itself.
- ak) The proposed product shall allow configuration of virtual systems resource limiting and management.
- al) The proposed product shall support Virtual routing and forwarding (VRF).
- am) The proposed product shall support various logging facilities:
 - | a) Local memory.
 - | b) Local Storage.
 - | c) Multiple concurrent syslog servers.



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1. HCI Hardware Servers Qty: 03

SERVERS REQUIREMENT	
PROCESSOR	2 x Intel® Xeon Gold 5 th Gen. 20 Cores or Higher
MEMORY	8x 32 GB DDR5 RAM or Higher
HARDDISK	2x 480GB SSD or Higher with Raid 1 for OS Installation
STORAGE	<p>Tier 1: Active Tier (SSD) - Current Year Config: Distributed across 3 nodes for higher IOPS and throughput. Hardware Per Node: Qty 4 x 3.84 TB SATA/SAS SSDs. Capacity Calculation: Total Drives: 12 SSDs (4 drives x 3 nodes). Total Raw Capacity: ~46 TB. Usable Capacity (RF2/Mirroring): ~23 TB.</p> <p>Tier 2: Archive Tier (HDD) - Previous Year Config: High-density storage optimized for capacity. Hardware Per Node: Qty 2 x 10 TB SATA HDDs. Capacity Calculation: Total Drives: 6 HDDs (2 drives x 3 nodes). Total Raw Capacity: 60 TB. Usable Capacity (RF2/Mirroring): ~30 TB.</p>
ETHERNET	4 x 1G Copper Ports Ethernet or Higher
MULTIMODE OPTICAL TRANSCEIVER	4 x 10G Ethernet Optical Ports with SFP Modules or Higher
RAID CONTROLLER/CARD	RAID Card with Pass Through Supported
POWER SUPPLY	Dual Power
RACK MOUNT RAIL	Complete Rail Kit for Rack Mounting
MANAGEMENT SOFTWARE	Embedded Server Management Software as per standard requirement with all licenses
WARRANTY	Mandatory 3 Years Comprehensive Warranty for all active equipment (Servers, Switches, Firewalls) including replacement of parts onsite



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2. Backup Server Node Qty:1

SERVERS REQUIREMENT	
PROCESSOR	2 x Intel® Xeon Gold 5 th Gen. 16 Cores or Higher
MEMORY	4 x 32 GB DDR5 RAM
HARDDISK	2 x 480GB SSD or Higher with Raid 1 for OS Installation
STORAGE	12 x 10 TB SATA (RAID6)
ETHERNET	4 x 1G Copper Ports Ethernet or Higher
MULTIMODE OPTICAL TRANSCEIVER	2 x 10G Ethernet Optical Ports with SFP Modules or Higher
RAID CONTROLLER/CARD	RAID Card with Pass Through Supported
POWER SUPPLY	Dual Power
RACK MOUNT RAIL	Complete Rail Kit for Rack Mounting
MANAGEMENT SOFTWARE	Embedded Server Management Software as per standard requirement with all licenses
WARRANTY	3 Years 5x9 NBD warranty including replacement of parts onsite

3. Main Site Network Switch Qty:2

MAIN NETWORK SWITCH REQUIREMENT	
General Specification	<ul style="list-style-type: none">• 24 x 10G SFP+ Ports and 8 x 1/10G Uplink Ports, Switching capacity: 2.56 Tbps or higher, Forwarding throughout 536 Mbps or higher, With Redundant Power Supplies (Installed 16 x 10G Multi Mode SFPs & 8 x 1G Copper SFPs) With Redundant Power Supplies• Built-in free NMS, support one-click startup and web smart management of the entire network, include FTP server configuration, global configuration, upgrade and backup, monitoring and failure replacement, network topology visualization etc.



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Layer 2 Features	<ul style="list-style-type: none"> Support more than 32K MAC address tables, Mac-based, Port-based, protocol-based, and IP subnet-based VLAN assignment STP/RSTP/MSTP/PVST+/RPVST+ Support up to 4K active VLAN Port-based VLAN (up to 4094 VLANs), Default VLAN, Private VLAN, QinQ and flexible QinQ, VLAN mapping
Layer 3 Features	<ul style="list-style-type: none"> Support Static route, RIP, RIPng, OSPF, Policy Routing, BGP, IS-IS
Multicast	<ul style="list-style-type: none"> IGMP snooping v1/v2/v3, MLD snooping v1/v2, Multicast VLAN replication, PIM-SM , PIM-SSM , PIM-DM
QoS	<ul style="list-style-type: none"> Flexible queue scheduling algorithms based on both port and queue, including SP, WDRR, WRR, WFQ, and SP+WRR Eight output queues per port
Security	<ul style="list-style-type: none"> DAI (Dynamic ARP Inspection) feature, DHCP Snooping, IP Source Guard, Control Plane Protection (CoPP), Wireless Intrusion Prevention System (WIPS), Port isolation, IP/Port/MAC binding
Network O&M	<ul style="list-style-type: none"> Support SNMPv1/v2c/v3, Telnet, RMON, SSHv2, Web management and automatic configuration
Warranty	<ul style="list-style-type: none"> 3-Year Comprehensive Warranty and Must Have OEM have registered legal entity with (SECP) OR 10+ Years Presence in Pakistan along with Local OEM Support must be present in Pakistan

4. Backup Site Network Switch Qty:1

BACKUP NETWORK SWITCH REQUIREMENT	
General Specification	<ul style="list-style-type: none"> 16 x 10G SFP+ Ports, Switching capacity:2.56 Tbps or higher, Forwarding throughout 240 Mpps or higher, With Redundant Power Supplies (Installed 4 x 10G Multi Mode SFPs & 4 x 1G Copper SFPs and 2 x 10G Single Mode SFPs) Built-in free NMS, support one-click startup and web smart management of the entire network, include FTP server configuration, global configuration, upgrade and backup, monitoring and failure replacement, network topology visualization etc.



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Layer 2 Features	<ul style="list-style-type: none"> Support more than 32K MAC address tables, Mac-based, Port-based, protocol-based, and IP subnet-based VLAN assignment STP/RSTP/MSTP/PVST+/RPVST+ Support up to 4K active VLAN Port-based VLAN (up to 4094 VLANs), Default VLAN, Private VLAN, QinQ and flexible QinQ, VLAN mapping
Layer 3 Features	<ul style="list-style-type: none"> Support Static route, RIP, RIPng, OSPF, Policy Routing, BGP, IS-IS
Multicast	<ul style="list-style-type: none"> IGMP snooping v1/v2/v3, MLD snooping v1/v2, Multicast VLAN replication, PIM-SM , PIM-SSM , PIM-DM
QoS	<ul style="list-style-type: none"> Flexible queue scheduling algorithms based on both port and queue, including SP, WDRR, WRR, WFQ, and SP+WRR Eight output queues per port
Security	<ul style="list-style-type: none"> DAI (Dynamic ARP Inspection) feature, DHCP Snooping, IP Source Guard, Control Plane Protection (CoPP), Wireless Intrusion Prevention System (WIPS), Port isolation, IP/Port/MAC binding
Network O&M	<ul style="list-style-type: none"> Support SNMPv1/v2c/v3, Telnet, RMON, SSHv2, Web management and automatic configuration
Warranty	3-Year Warranty Comprehensive and must have OEM have registered legal entity with (SECP) or 10+ Years Presence in Pakistan along with Local OEM Support must be present in Pakistan

5. Network Firewall Qty:1

FIREWALL REQUIREMENT (minimum)	
Firewall throughput	12 Gbps
IPSec VPN Throughput	10 Gbps
IPS throughput	2.6 Gbps
NGFW Throughput (with App Control + IPS enabled)	2.5 Gbps
Threat Protection Throughput (App Control + IPS + AV + URL Filtering)	1.5 Gbps
SSL/TLS Inspection Throughput	1.5 Gbps



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Application Control throughput	2.2 Gbps
Concurrent TCP sessions	2 million
New TCP sessions/sec	100,000
Virtual Firewall/Router/Domains	10 / 10
Interfaces	4 × 10GbE SFP+ ports 8 × 1GbE RJ45 ports 1 × dedicated management port 1 × console port (RJ45 or USB)
Local Storage	Integrated SSD: Minimum 240 GB for logging and reporting High Availability: Active/Passive HA with stateful failover, sub-second failover time
Licensing (3-year term)	Unified Threat Management (UTM) including: Intrusion Prevention System (IPS), Application Control, Antivirus/Antimalware, URL/Web Filtering, Anti-spam, SSL Inspection — 24×7 support with firmware updates
Compliance	Firewall vendor must be positioned in the Leaders or Challengers quadrant of the most recent Gartner Magic Quadrant for Network Firewalls

6. Desktop Computers Qty: 15

Parameter	Specification
Processor	Intel Core i7, 14th Generation or later, minimum 8 performance cores
RAM	16 GB DDR5-4800 in dual-channel configuration, expandable to 64 GB
Storage	512 GB NVMe SSD, minimum 3,500 MB/s sequential read
Graphics	Integrated Intel UHD Graphics or better
Operating System	Windows 11 Professional OEM (64-bit)
Display	24-inch IPS LED monitor, 1920×1080 resolution minimum, HDMI and DisplayPort inputs
Peripherals	USB keyboard and optical mouse
Form Factor	Small Form Factor (SFF) or Mini Tower
Expansion	Minimum 1 × PCIe x16 slot, 2 × USB 3.2 front ports, 4 × USB rear ports
Quality Requirements	Manufacturer must have direct presence in Pakistan with authorized service centers in Karachi. System must carry minimum 3-year onsite warranty from manufacturer. System must be EPEAT Gold certified or equivalent environmental certification
Reference Brands (or equivalent)	Systems meeting these specifications are available from major manufacturers including Dell, HP, Lenovo, and Fujitsu



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7. Air Conditioners Qty:1

REQUIREMENT
<ul style="list-style-type: none">• Free Kit & Installation• 24000 BTU• 100% Copper• 15m Long Throw• Turbo Mode• Sleep Mode• Timer• Auto Restart• Wi-Fi• Heat & Cool• A class Energy Efficiency• R410 Refrigerant

WARRANTY

Compressor: 10 Years

PCB: 4 Years

Evaporator / Condenser: 2 Years Parts & Service: 1 Year

Solution Justification:

This turnkey HCI solution is fully capable of handling high-speed OMR scanning and e-Marking workloads. With 3 nodes and a dedicated backup server, it provides high availability, redundancy, and disaster recovery capabilities. Enterprise networking and NGFW ensure secure and reliable communication between nodes. The system is scalable for future growth and allows centralized management through a single console. Air conditioning maintains optimal operating conditions.

Support & Warranty: All hardware and software components come with 3 years 5x9 NBD support including onsite replacement. OEM licenses are included for virtualization management, HCI software, backup software, and firewall.



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LOT 02

TECHNICAL PROPOSAL (Scanners & Cutters)

INDUSTRIAL SCANNERS Qty 15 Nos.

<u>S. No.</u>	<u>Specification</u>	<u>Quantity</u>
1)	Scanning Speed (Color/Black-and-white/grayscale): 120 ppm/240 IPM at 200 and 300 dpi, Dual CIS Dual RGB LED Illumination CIS (CMOS) with maximum output resolution of 1200 dpi or higher.	
2)	Recommended Daily volume: 100,000 pages per day	
3)	Operator Control Panel: 3.5 inch (89 mm) graphical color touch screen LCD with operator control buttons. Minimum Document Size: 63.5 mm x 71.1 mm Maximum document size 305 mm x 4.06 mm.	
4)	Automatic Document Feeder Up to 500 sheets of 80 g/m ² (20 lb.) paper, with Straight Paper Path for fragile pages and U-turn paper path for bulk/production scanning.	
5)	Paper Thickness and Weight & Connectivity: minimum 34 g/m ² upto 433 g/m ² , USB 3.2 Gen 1x1 Certified (Compatible with USB 2.0 and 3.0) & Built in Ethernet (10/100/1000)	
6)	Features & OS Support: controlled stacking, Perfect Page technology, thresholding, automatic color detection, On Board Image Processing, auto crop, Intelligent document protection by proactive listening, Ultrasonic multi-feed detection, Digital Stamping, The ADF unit should support the attachment of a separately available A3 flatbed accessory for future scanning requirement, Supported Operating Systems, Windows7,8,10 (32 and 64 bits, window server, Ubuntu 22.04 or higher, Linux and restful API's.	15 Nos.
7)	Warranty and Support: 3-year comprehensive warranty with parts and labour and the bidder will provide MAL letter in favour of procuring authority. The bidder will be responsible of Consumables for 15 million scans per scanner or 3-year warranty, whichever comes first.	
8)	Performance and Demonstration: The bidder should have past experience with education boards must attach 05 or more Purchase orders of education board along with satisfactory reports for the quoted models. The bidder must provide physical demonstration of quoted model.	



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Paper Cutting Machine Qty 03 Nos

Diagram/Picture of Product	Specifications
	<ul style="list-style-type: none">Model : SG-7210PXCutting width : 720 mmCutting depth: 720 mmMax. cutting thickness: 100mmMin. cutting depth: 30mmCutting system: HydraulicPrecision: $\pm 0.2\text{mm}$Red direction line: YesControl panel: 7" Touch ScreenPrograming: 99 Groups * 20 CutsFoot pedal: MechanicalPush paper : Automatic with double shaftSafety: "Dual-Hand Operation" (buttons must be pressed by both hands simultaneously to cut).Micro button: YesReplace blade button: YesBack device: FoldableMachine size: 110138147cmMotor power : AC 220V/2.5KW
	<ul style="list-style-type: none">SG-7210PXName: BladeFunction: Cut paper
	<ul style="list-style-type: none">SG-7210PXName: Cutting padFunction: Protect blade



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LOT 03

TURNKEY SOLUTION FOR A-UPGRADATION OF UPS, ELECTRICITY REVAMPING

Executive Summary

Turnkey Solution for Upgradation of UPS, Electricity, Solar to offset the KE bill & Generator at BSE Building

Objective:

Ensure uninterrupted operations of the Computer Cell by implementing a smart power management solution with UPS monitoring, generator backup, and solar integration.

Scope of Work:

1. UPS, Generator Integration for Computer Cell.
2. Solar Integration to offset the KE bill for BSEK
3. Installation of 40–60 KVA Online UPS with SNMP monitoring for real-time monitoring of load, battery status, input/output voltage, & connected electrical appliances.
4. Installation of solar PV system to supplement energy requirements, reduce operational costs, and ensure green energy adoption OR Integration with a diesel generator for extended backup.
5. Electrical revamp for panels, cabling, and distribution supporting UPS, generator, and solar integration.

Benefits:

- Real-time monitoring of UPS and connected electrical appliances via SNMP.
- Zero downtime for Computer Cell operations.
- Green energy adoption via solar PV.
- Reliable power with UPS and generator integration.
- Implementation Timeline: 8–10 weeks, including installation, testing, & commissioning.
- Cost Efficiency: Single-point turnkey solution reduces procurement complexity and enhances operational efficiency.



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Specification Sheet: UPS, Electrical, Solar & Generator	
Parameter	Specification
Capacity	40–60 KVA (as per load)
Type	Online Double Conversion (VFI)
Input Voltage	415V, 3-phase
Output Voltage	400V, 3-phase
Battery Backup	Minimum 30 minutes @ full load
Battery Type	Lithium-Ion
Features	SNMP monitoring, surge protection, voltage stabilization, automatic bypass
Monitoring	Real-time SNMP-based monitoring of UPS, battery, and connected appliances
Management	Compatible with network management software for remote monitoring

Generator Backup	
Parameter	Specification
Capacity	50–70 KVA diesel generator
Output Voltage	400V, 3-phase
Fuel Tank	Minimum 8–10 hours runtime @ full load
ATS	Automatic Transfer Switch for seamless grid/UPS/Generator switching

Solar Power System	
Parameter	Specification
Capacity	20–30 KW Solar PV
Type	Grid-tied / Hybrid system
Inverter	3-phase compatible with UPS
Battery	Optional (for off-grid support)
Benefit	Reduces grid dependency, green energy, and operational cost savings

Electrical Revamp	
Parameter	Specification
Main Distribution	Upgraded MDB & Panels
Cabling	High-quality copper cabling
Earthing	Enhanced grounding system
Safety	MCBs, isolators, surge protection devices



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Supply and Installation of Power backup system (100 KVA)

<u>S. No.</u>	<u>ITEM (SPEC / REMARK)</u>	<u>Unit</u>	<u>Oty</u>
1.	Jinko PV Module — 720 W (PV module, including junction box, frame)	Pcs	140
2.	Sungrow inverter bank — 100 kW (Sungrow SG125 or equivalent)	Pcs	1
3.	Mounting structure (galv steel/aluminum rails, clamps, fasteners)	Job	1
4.	DC PV cable (Pakistan Cables, solar-rated) — assorted sizes (string runs)	M	~500
5.	Switchgear & protection (Schneider): DC combiner isolators, AC DBs, MCCB, SPDs, isolators		—
6.	DC Combiner boxes & accessories (fuses, MC4 combiner)	No	1
7.	AC cabling, termination, glands (to building main)	M	~80
8.	Labour & installation (mechanical + electrical + cable laying)		—
9.	Testing & commissioning, site testing, net-metering support		—
10.	Earthing & lightning protection (rooftop)		—
11.	Transport / logistics		—
12.	Misc / overheads / spare parts / warranty reserve		—

(Reference to brand name, catalogue number or country where used, they should always be read with followed by the words "or at least equivalent.")

<u>S. No.</u>	<u>Other Work</u>	<u>Unit</u>	<u>Oty</u>
1.	Supply and Installation of 4 ton AC Floor standing For Server Room complete in all respect	Job	1
2.	Supply and Installation of 2 ton AC For Inverter and Battery Room complete in all respect	Job	1
3.	Supply and Installation of Separation room For Server Room complete in all respect	Job	1
4.	Civil work making of Inverter and Battery Room	Job	1
5.	Re-Establish for Electrical system	Job	1

(Reference to brand name, catalogue number or country where used, they should always be read with followed by the words "or at least equivalent.")



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LOT 04

Upgradation of Network Architecture (HLD)

1. Overall Network Architecture (High Level Design)

The proposed network architecture shall be a **fully redundant, high-availability campus network** based on **three-tier design**:

- Internet Edge Layer
- Core Layer
- Access Layer
- Wireless Access Layer

The design ensures **no single point of failure, 10G backbone, and future scalability**.

2. Internet Connectivity & ISP Layer

1. The network shall support **dual Internet Service Providers (ISP-1 & ISP-2)**.
2. Each ISP shall be terminated on **separate 8-port ISP switches**.
3. ISP switches shall be interconnected with:
 - Firewalls (FW1 & FW2)
 - Redundant uplinks
4. All uplinks between ISP switches and firewalls shall be **10 Gigabit Ethernet (10G)**.
5. Automatic failover shall be supported in case of ISP failure.

3. Firewall & Security Layer

1. Two (02) **Next Generation Firewalls (NGFW)** shall be deployed in **High Availability (HA)** mode.
2. Firewalls shall support:
 - Active/Active or Active/Standby HA
 - Stateful failover
 - Session synchronization
3. Firewall features shall include:
 - Stateful inspection
 - IPS/IDS
 - Application control
 - Web filtering
 - SSL inspection
 - VPN (IPSec & SSL)
4. Firewalls shall have **minimum four (04) 10G interfaces**.
5. Firewalls shall be connected redundantly to:
 - Both ISP switches
 - Both Core switches



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4. Core Network Layer

1. Two (02) **Core Switches** shall be deployed in **redundant configuration**.
2. Core switches shall support:
 - o Layer-3 routing
 - o VRRP / HSRP / Stack / MLAG (vendor specific)
 - o Non-blocking architecture
3. Core switches shall have:
 - o Multiple **10G SFP+ ports**
 - o Redundant power supplies
4. Core switches shall be interconnected with **10G links**.
5. All downstream Access switches shall be dual-homed to both core switches.

5. Access Switch Layer

1. Multiple **Access Switches (ASW1, ASW2, ASW11, etc.)** shall be deployed.
2. Each Access Switch shall be connected to **both Core switches** using **10G uplinks**.
3. Access switches shall support:
 - o Layer-2 switching
 - o VLANs
 - o STP/RSTP/MSTP
 - o Link aggregation (LACP)
4. Access switches shall provide:
 - o Gigabit access ports for end devices
 - o PoE/PoE+ for Wireless Access Points
5. Access layer shall ensure:
 - o High availability
 - o Load sharing
 - o Fast convergence

6. Wireless Network Infrastructure

1. Wireless solution shall include:
 - o Centralized Wireless Controllers (AC1 & AC2)
 - o Lightweight Access Points (APs)
2. Wireless Controllers shall be deployed in **redundant mode**.
3. Controllers shall be connected to **Core switches via 10G links**.
4. Wireless APs shall support:
 - o IEEE 802.11ac / 802.11ax (Wi-Fi 5 / Wi-Fi 6)
 - o Dual band (2.4 GHz & 5 GHz)
 - o Seamless roaming
5. APs shall be powered via **PoE** from Access switches.
6. Wireless network shall support:
 - o Enterprise security (WPA2/WPA3)
 - o Guest access
 - o Centralized management



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7. Cabling & Interfaces

1. All backbone links shall be **10G Fiber Optic (Single-mode or Multi-mode as required)**.
2. Access links shall be **Cat-6 / Cat-6A**.
3. SFP+/Transceivers shall be original and vendor-certified.
4. Proper cable management and labeling shall be ensured.

8. Redundancy & High Availability

1. Redundancy shall be provided at:
 - o ISP level
 - o Firewall level
 - o Core switch level
 - o Uplink level
2. Network shall automatically recover from:
 - o Link failure
 - o Device failure
3. No single point of failure shall exist in the design.

9. Network Management & Monitoring

1. All devices shall support:
 - o SNMP
 - o Syslog
 - o NTP
2. Centralized monitoring and alerting shall be available.
3. Configuration backup and restore shall be supported.

10. Compliance & Standards

1. All equipment shall be:
 - o Brand new
 - o Internationally recognized brands (Cisco / HUAWEI / Aruba / Fortinet / Juniper or equivalent)
2. Equipment shall comply with:
 - o IEEE standards
 - o Local regulatory requirements
3. Minimum **3-year warranty**

11. Documentation & Deliverables

Vendor shall provide:

1. Detailed network design diagram
2. As-built documentation
3. IP addressing scheme
4. VLAN & security policy documentation
5. Testing & commissioning report
6. Knowledge transfer session



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PART-A **B.O.Q (NOT LIMITED TO)**

<u>S. No.</u>	<u>Item Description</u>	<u>Specification Summary</u>	<u>Quantity</u>
1.	Internet Edge / ISP Switch	8-Port switch, minimum 4x10G SFP+, L2/L3 support	2
2.	Next Generation Firewall	Enterprise NGFW meeting specifications above, including HA license	2
3.	Core Switch	Layer-3 Core switch, minimum 24x10G SFP+, redundant PSU	2
4.	Access Switch (PoE)	48x1G PoE+ ports, minimum 4x10G uplinks	3
5.	Wireless Controller	Centralized WLAN Controller with redundancy	2
6.	Wireless Access Points	Enterprise dual-band Wi-Fi 6 Access Points	50
7.	10G SFP+ Modules	Vendor-certified SFP+ transceivers	As Required
8.	Fiber Optic Cabling	SM/MM fiber with termination & testing	Lot
9.	Copper Cabling	Cat-6 / Cat-6A structured cabling	Lot
10.	Racks & Accessories	Network racks, patch panels, cable management	Lot
11.	Network Management Software	Centralized monitoring & logging	1
12.	Installation & Configuration	Deployment, testing & commissioning	1
13.	Documentation & Training	As-built documentation & training	1



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PART-B **TECHNICAL SPECIFICATIONS**

1. Internet Edge / ISP Switch

- Minimum **8 ports**
- Support for **10G SFP+ uplinks**
- Layer-2 & basic Layer-3 features
- VLAN, STP, LACP support
- Redundant power preferred

2. Next Generation Firewall (NGFW)

Firewall shall support:

- Stateful firewall
- IPS / IDS
- Application control
- Web filtering
- SSL inspection
- VPN (IPSec & SSL)
- High Availability (Active/Active or Active/Standby)
- Minimum **4 × 10G interfaces**
- Throughput suitable for enterprise traffic

3. Core Switch (Layer-3)

Core switch shall support:

- Layer-3 routing
- OSPF / Static routing
- VRRP / HSRP / equivalent
- Minimum **24 × 10G SFP+ ports**
- Non-blocking switching fabric
- Redundant power supplies
- Stack / Virtual chassis / MLAG support



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4. Access Switch (PoE)

- 48 × 1G Ethernet ports
- PoE / PoE+ support
- Minimum 4 × **10G uplinks**
- VLAN, STP, QoS
- Link Aggregation (LACP)
- Dual uplink to core switches

5. Wireless Controller

- Centralized WLAN management
- Support for minimum **50 APs**
- Redundancy / failover support
- CAPWAP or equivalent
- Role-based access control
- Guest access support

6. Wireless Access Points

APs shall support:

- IEEE 802.11ac / 802.11ax (Wi-Fi 6 preferred)
- Dual band (2.4 & 5 GHz)
- WPA2 / WPA3
- Seamless roaming
- PoE powered
- Ceiling / wall mount

7. Cabling & Optics

- 10G Fiber (SM/MM as required)
- Cat-6 / Cat-6A structured cabling
- Vendor-certified SFP+ modules
- Proper labeling & testing



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8. Redundancy & High Availability

- Dual uplinks for access switches
- No single point of failure

9. Network Management

- SNMP support
- Syslog
- NTP
- Configuration backup
- Performance monitoring

10. Warranty & Support

- Brand new equipment
- Minimum **1-year warranty** (3-year preferred)
- Local technical support availability

11. Documentation & Deliverables

Vendor shall provide:

- Network diagram
- As-built documentation
- IP & VLAN plan
- Testing & commissioning report
- Administrator training session

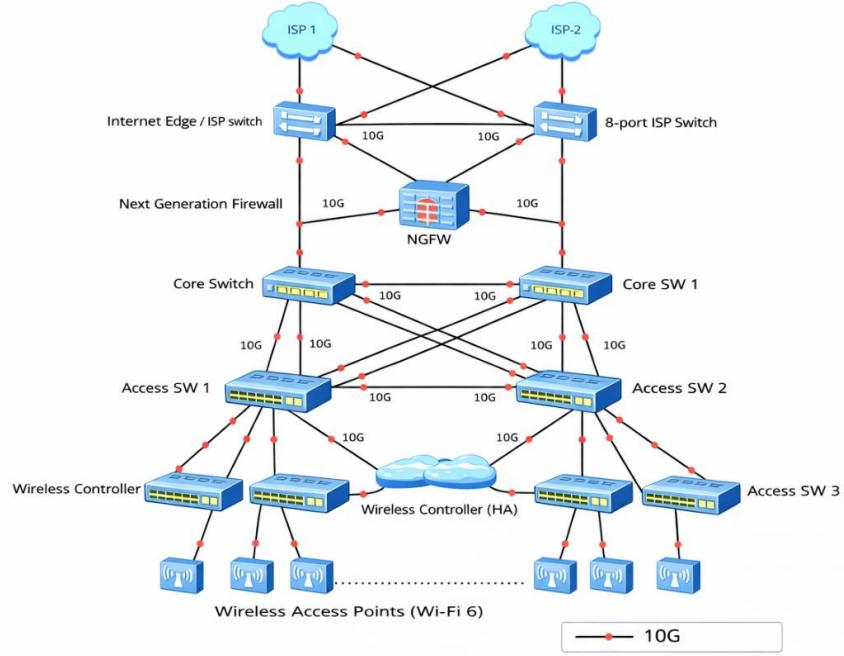


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Network Logical Diagram (Sample)



Network Logical Diagram



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❖ **System Installation and Commissioning (Where required)**

- On-site (BSEK) installation of equipment and its software.
- Comprehensive testing & services of the system to ensure accuracy and reliability.
- Vendor will be fully responsible for the complete hardware integration with the OMR & E-Marking Solution & BSEK's main application.
- SDKs integration wherever applicable.

❖ **Training**

- Conducting comprehensive training sessions for BSEK staff, examiners, and IT personnel, train the trainer basis. (Included in LOT-1 & LOT-2)
- Specialized training + certification (Certified Information Sec Manager) – 1 position. (where required)

❖ **Maintenance and Support**

- Technical support during examination periods till assessment.
- Replacement or repair of faulty hardware components within agreed timelines.

❖ **Security and Data Privacy**

- Implementation of robust security to prevent unauthorized access to exam data. (where required)

❖ **Deliverables**

- A fully operational OMR and E-Marking hardware system that complies with the defined scope.
- Detailed documentation of processes, technical specifications, and user guidelines & Design documents for future integrations.

❖ **Timeline**

- The required items must be delivered/installed within 45 days preferably and the assignment must be completed within 60 days from the date of the contract award, however bidder will be responsible to provide services till "Completion of OMR and E-Marking System Phase-I".



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REMARKS/OBSERVATIONS OF BIDDER (IF ANY)



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FINANCIAL PROPOSAL

S. SPECIFICATION
NO.

RATES INCLUDING ALL
TAXES (DDP)
(Complete in all respects)

1) Total Cost for LOT 1(A) Rs. _____

Total Cost for LOT 1(B) Rs. _____

Total Cost for LOT 1 (A)
RUPEES IN WORDS: _____

Total Cost for LOT 1 (B)
RUPEES IN WORDS: _____

S. SPECIFICATION
NO.

RATES INCLUDING ALL
TAXES (DDP)
(Complete in all respects)

2) Total Cost for LOT 2 Rs. _____

RUPEES IN WORDS: _____



BOARD OF SECONDARY EDUCATION, KARACHI

NAZIMABAD KARACHI-75990

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FINANCIAL PROPOSAL

<u>S. NO.</u>	<u>SPECIFICATION</u>	<u>RATES INCLUDING ALL TAXES (DDP)</u> <i>(Complete in all respects)</i>
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3) Total Cost for LOT 3 Rs. _____

RUPEES IN WORDS: _____

<u>S. NO.</u>	<u>SPECIFICATION</u>	<u>RATES INCLUDING ALL TAXES (DDP)</u> <i>(Complete in all respects)</i>
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4) Total Cost for LOT 4 Rs. _____

RUPEES IN WORDS: _____



BOARD OF SECONDARY EDUCATION, KARACHI

NAZIMABAD KARACHI-75990

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B.O.Q

	<i>Rupees In Figures</i>	<i>Rupees In Words</i>
Total cost of the Bid: <i>(as offered by the Bidder)</i>		
Bid Security (Refundable)		
10% (ten percent) amount of the Contract Price Performance Security (Refundable)		

SUMMARY OF TURN-OVER OF LAST THREE YEARS		
YEAR-2023	YEAR-2024	YEAR-2025
TOTAL:		



BOARD OF SECONDARY EDUCATION, KARACHI

NAZIMABAD KARACHI-75990

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CERTIFICATE

I/We have carefully read & understood the Terms & Conditions whatever has been stated herein the Bidding Documents and abide to the same. I/We guarantee to supply/deliver/install the items exactly in accordance with the requirements and enclosed the Bid Security (Refundable) payable to Board of Secondary Education Karachi.

SIGNATURE WITH DATE:

NAME OF FIRM:

ADDRESS OF FIRM:

FULL NAME OF CONCERNED PERSON:

CNIC NUMBER:

POSITION HELD IN:

PHONE NUMBER(S):

MOBILE NUMBER(S):

FAX NUMBER(S):

NATIONAL TAX NUMBER:

GENERAL SALES TAX NUMBER:

STAMP OF THE FIRM:

PAY ORDER NUMBER:

BANK & BRANCH NAME:

DATED:

FOR RUPEES:

DRAWN:

as Bid Security is enclosed herewith.

بورڈ آف سینڈری ایجوکیشن، کراچی

ناظم آباد کراچی-75990



فون نمبر 99260079-6, 99260252-6، ویب سائٹ: www.bsek.edu.pk، ای میل: pnp@bsek.edu.pk

No.BSE/P&P/1085/2026

Dated 20-01-2026

ٹینڈر طلبی نوٹس

مندرجہ ذیل آئلر کیلئے ویچس کے حامل پلائرز افرز سے سر بھر پیشکشیں مطلوب ہیں۔

آئلر کے نام	بُد سیکورٹی	ٹینڈر فیس	مدت تکمیل
اورائی - مارکنگ سلوشن کا حصول اور تھیب (LOTs) (بُرڈ ویز)	1,400,000/- روپے (چودہ لاکھ روپے صرف) (قابل وابسی) بیکل پے آرڈر بنا مسکریٹری بُرڈ (قابل وابسی) بیکل پے آرڈر بنا مسکریٹری بُرڈ آف سینڈری ایجوکیشن کراچی	2000 روپے (دو ہزار روپے صرف) (قابل وابسی) بیکل پے آرڈر بنا مسکریٹری بُرڈ آف سینڈری ایجوکیشن کراچی	کنٹریکٹ ایوارڈ کے اجراء کے بعد ایک ماہ

نوت: (مندرجہ بالا آئلر کی مکمل تفصیل پیش دستاویزات میں مندرج ہیں)۔**2- معیار اہلیت:** (i) ٹینڈر فیس بُرڈ - 2,000/- (دو ہزار روپے صرف) (قابل وابسی) بیکل پے آرڈر بنا مسکریٹری بُرڈ آف سینڈری ایجوکیشن کراچی۔

(ii) بُد سیکورٹی بُرڈ - 1,400,000/- روپے (چودہ لاکھ روپے صرف) (قابل وابسی) بیکل پے آرڈر بنا مسکریٹری بُرڈ آف سینڈری ایجوکیشن کراچی۔

(iii) متعلق شعبہ میں تین برس کا تجربہ

(iv) گذشتہ تین برس کا فرمان اور کم از کم مبلغ - 70,000,000/- (ستیون روپے صرف) کی رقم کا حامل (مالیاتی گوشوارہ/آڈٹر پورٹ کی نقل ملک ہو)

(v) EPADS (SPPRA) سے جائز ہیں۔ (vi) اکم ٹکس اور سیلر ٹکس کیلئے فیڈرل بُرڈ آف ریویو (FBR) سے جائز ہیں۔ (vii) سندھر یونیورسٹی بُرڈ (SRB) سے جائز ہیں۔

(viii) مینیسٹریکر کا اتحادیہ سرٹیفیکیٹ / ایئر

(ix) ملکی تصریحات اور مطلوبہ معیارات کی تکمیل

(x) پیش دستاویزات کے ساتھ ملک نمونہ کے مطابق استامپ پیپر (-/00 روپے) پر ایک اقرار نام۔

3- پروکیومنٹ کا طریقہ:

(سنگل ایچ - دو افاف پر ویجہ)۔

4- بد نگ / ٹینڈر دستاویزات:

(i) پری بُد مینگ: منگل 2026-02-02 سے پہر 00:00 بجے تک۔

(ii) اجرا: بُد دستاویزات اشاعت / ہو سنگ کی پہلی تاریخ سے منگل 2026-02-10 سے پہر 03:00 بجے تک جاری کی جائیگی۔

(iii) جمع کرانا: آخری تاریخ منگل 2026-02-10 سے پہر 00:00 بجے تک ہوگی۔

(iv) کھولنا: منگل 2026-02-10 سے پہر 03:00 بجے کھولے جائیں گے۔

5- شرائط و ضوابط: (a) درج ذیل صورتوں میں پیش دستاویزات میں مسزد کر دکری جائے گی۔

(i) مشروط پیشکشیں / نینڈرز۔ (ii) مطلوب رقم اور بیکل کی نینڈر فیس اور بُد سیکورٹی کے بغیر موصول پیشکشیں۔ (iii) مقرر کردہ تاریخ اور وقت کے بعد موصول پیشکشیں (iv) بلک لیڈ فرمازی پیشکشیں۔ (v) مفصل شرائط و ضوابط بُد نگ دستاویزات میں مذکور ہیں)

(b) پیش دستاویزات میں مذکور ہیں)۔

(b) پیش دستاویزات میں مذکور ہیں)۔

(c) سندھ پبلک پر کورٹ رولز 2010، (ترمیم شدہ 2025) کے متعلق مندرجات سے مشروط پر کورٹگ ایجنسی کوئی یا تمام پیشکشیں مسزد کرنے کا حق محفوظ رکھتی ہے۔

(d) مقصد اور اسکوپ: SSC امتحانات سے متعلق سہولت کے ساتھ امتحانی کارروائیاں

6- نینڈر کھولنے کی تاریخ کوہر میں ناموفق حالات پیدا ہو جانے یا حکومت کی صورت میں اگلائوم کاران ہی اوقات میں جیسا کہ مذکور ہے پیشکشیں نینڈر رکے اجراء، جمع کرنے اور کھولنے کی تاریخ تصور ہو گا۔

و سخط... (کنویسہر پر کورٹ منٹ کمیٹی)

بورڈ آف سینڈری ایجوکیشن کراچی، ناظم آباد، کراچی 75990

BOARD OF SECONDARY EDUCATION, KARACHI

KARACHI - 75990

No. BSE/P&P/746/2025

Dated 20-11-2025

NOTIFICATION

Subject: RE-CONSTITUTION OF PROCUREMENT COMMITTEE FOR THE FINANCIAL YEAR 2025-2026 & ONWARDS

It is hereby notified for information of all concerned that the Chairman has been pleased to re-constitute the Procurement Committee for the financial year 2025-2026, under Rule-7 & 8 of SPPRA Rules-2010 (Amended 2025). The Procurement Committee shall comprise of the following Officers:-

1) Mr. Muhammad Zia ul Haq Acting Secretary, Board of Secondary Education Karachi	Convener
2) Mr. Khan Muhammad Tunio Associate Professor, A.R.G Govt. Degree College Razzakabad Karachi	Member other than Procuring Agency/I.T Expert
3) Shaikh Muhammad Tariq Karim Officiating D.C.E, Board of Secondary Education Karachi	Member
4) Mr. Noor Nabi Assistant Secretary, Board of Secondary Education Karachi	Member
5) Mr. Muhammad Nadeem Ikram Assistant Secretary, Board of Secondary Education Karachi	Member/Secretary of Committee

The above Officers are further directed to acquire essential training of EPADS as & when announced by SPPRA .

Functions and Responsibilities of Procurement Committee (TORs)

Procurement committee(s) shall be responsible for;

- (1) Preparing and/or Reviewing bidding documents;
- (2) Carrying out technical as well as financial evaluation of the bids;
- (3) Preparing evaluation report as provided in Rule 45;
- (4) Making recommendations for the award of contract to the competent authority; and
- (5) Perform any other function ancillary and incidental to the above.
- (6) Two-third of the members shall form the quorum and presence of one outside member shall be mandatory.
- (7) The decision of the Procurement Committee shall be taken on the basis of majority of votes of the total strength of the Committee.



(MUHAMMAD NADEEM IKRAM)
Assistant Secretary (P&P)/
Secretary of Procurement Committee

Copy to: -

- 1) P.S to Chairman
- 2) P.A to Secretary

BOARD OF SECONDARY EDUCATION, KARACHI

KARACHI - 75990

No. BSE/P&P/399/2025

Dated 24-09-2025

NOTIFICATION

Subject: CONSTITUTION OF COMPLAINT/GRIEVANCE REDRESSAL COMMITTEE (CRC/GRC) FOR THE FINANCIAL YEAR 2025-2026 & ONWARDS

It is hereby notified for information of all concerned that the Chairman has been pleased to constitute Complaint/Grievance Redressal Committee (CRC/GRC) of the Board of Secondary Education Karachi, for the financial year 2025-2026 & onwards, under Rule-31 of SPPRA Rules-2010 (Amended 2025). The Committee shall comprise of the following Officers:-

- 1) Chairman, Board of Secondary Education Convener
Karachi
- 2) Representative of the Accountant General, Member
Sindh
- 3) Secretary, Board of Intermediate Education Member
Karachi
(Independent Professional)

This issues with approval of the Authority.



(MUHAMMAD NADEEM IKRAM)
Assistant Secretary (P&P)

Copy to: -

- 1) P.S to Chairman
- 2) P.A to Secretary
- 3) P.A to Controller of Examinations

BOARD OF SECONDARY EDUCATION, KARACHI

PROCUREMENT PLAN FOR THE FINANCIAL YEAR 2025-2026

Procurement Type	Item/Scheme Title	Procurement Description	Quantity (where applicable)	Estimated Unit Cost (where applicable)	Estimated Total Cost (In Million Rs.)	Funds Allocated (In Million Rs.)	Source of Funds (ADP/Non ADP)	Source Reference No.	Proposed Procurement Procedure	Proposed Procurement Method	Tentative Timing of Procurement	Remarks
Goods	OMR, OCR, QID & E-Marking Solution (Hardware)	Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Hardware)	—	—	70,000,000	120,000,000	Non ADP		Single Stage Two Envelopes Procedure	National Competitive Bidding	2 nd Quarter	Server, Computer Accessories and upgradation of Computer System.
Services	OMR, OCR, QID & E-Marking Solution (Software/ Integration)	Procurement and Installation of OMR, OCR, QID & E-Marking Solution (Software/ Integration)	—	—	20,000,000		Non ADP		Single Stage Two Envelopes Procedure	National Competitive Bidding	2 nd Quarter	Since allocated fund is derived from the same
Services	One year Renewal of Microsoft Licenses for Softwares/ Cloud Server	Procurement of Services for Renewal of Microsoft Licenses for Softwares/ Cloud Server	—	—	1,000,000		Non ADP		Single Stage One Envelope Procedure	National Competitive Bidding	2 nd Quarter	budget head, therefore in case of variation in cost, the amount may be adjusted.
Goods	Enhancement of Computer System (3 rd Phase)	Procurement of Enhancement of Computer System (3 rd Phase)	—	—	29,000,000		Non ADP		Single Stage One Envelope Procedure	National Competitive Bidding	2 nd Quarter	

(Syed Muneer Hasan)
 Acting Audit Officer/ Presenter

(M. Nadeem Ikram)
 Assistant Secretary/Member of Budget estimates

(Sh. M. Tariq Karim)
 Assistant Controller of Examinations/Member

(Khan Muhammad Tunio)
 Associate Professor, D.J.Science College Karachi/Member other than Procuring Agency

(M. Zia ul Haq)
 Acting Secretary/Member

(Dr. Alimzo Khan Tagar)
 Controller of Examinations/Convener

Sr. No	Name of Procurement (Description)	Estimated Cost (Rs)	Procurement Method**	Tentative date of Procurement Notice Publication	Tentative date of Award of Contract	Tentative date of Completion	Remarks (if any)
9	Machinery & I.T related Items	32,000,000	Open Competitive Bidding	27-10-2025	26-11-2025	26-12-2025	Machinery & Equipment, Since allocated fund is derived from the same budget head i.e Machinery & Equipment, therefore in case of variation in cost, the amount may be adjusted.
10	Maintenance of Air Conditioners	4,500,000	Open Competitive Bidding	17-10-2025	16-11-2025	16-12-2025	Maintenance of Machinery & Equipment
11	Maintenance of Computer, UPS, Machinery, Equipments etc.	8,000,000	Open Competitive Bidding	15-01-2026	14-02-2026	16-03-2026	Maintenance of Machinery & Equipment, Maintenance of Computer
12	Miscellaneous Items	3,000,000	Open Competitive Bidding	09-03-2026	08-04-2026	08-05-2026	This is an optional tender, placed as a preventative attempt, subject to requirement of any item(s) if left from above tenders or new requirement.
13	Office Furniture	10,000,000	Open Competitive Bidding	15-01-2026	14-02-2026	16-03-2026	Furniture and Fixture
14	OMR, OCR, QID & E-Marking Solution (Hardware)	70,000,000	Open Competitive Bidding	17-10-2025	16-11-2025	16-12-2025	Server, Computer Accessories and upgradation of Computer System. Since allocated fund is derived from the same budget head, therefore in case of variation in cost, the amount may be adjusted.
15	OMR, OCR, QID & E-Marking Solution (Software/Integration)	20,000,000	Open Competitive Bidding	17-10-2025	16-11-2025	16-12-2025	Server, Computer Accessories and upgradation of Computer System. Since allocated fund is derived from the same budget head, therefore in case of variation in cost, the amount may be adjusted.
16	One year Renewal of Microsoft Licenses for Softwares/ Cloud Server	1,000,000	Open Competitive Bidding	17-10-2025	16-11-2025	16-12-2025	Server, Computer Accessories and upgradation of Computer System. Since allocated fund is derived from the same budget head, therefore in case of variation in cost, the amount may be adjusted.
17	Papers, Toner & Ribbon Cartridges	19,000,000	Open Competitive Bidding	17-10-2025	16-11-2025	16-12-2025	Stationery for Computer

* The Annual Procurement Plan may be prepared on the assumption that total allocated budget will be released.

** Procurement method means Open Competitive Bidding/Petty Purchases/Quotations/Director Contracting/Negotiated Tendering.