

**DIRECTORATE  
OF  
TECHNICAL EDUCATION  
VOCATIONAL AND INDUSTRIAL TRAINING  
HIMACHAL PRADESH  
SUNDERNAGAR – 175018  
SHOPPING  
FOR  
TRAINER KIT**

8<sup>th</sup> February 2021

## SHOPPING FOR GOODS

### REQUEST FOR QUOTATION (RFQG)

**-- Note --**

- (i) *Shopping is a simplified procedure, used for low-value, readily available off-the-shelf goods. When considering Shopping, ADB should be satisfied that there are a sufficient number of local and/or foreign suppliers (a minimum of three) that can meet the requirements of the procurement and ensure a satisfactory level of price competition. The threshold for Shopping is currently set at \$100,000.*
- (ii) *Alternate texts for some paragraphs are provided. The Purchaser may select one option and delete the non-applicable option.*

**RFQ NO. GPR/10/2021**

**Date of Issue of Request: 08/02/2021**

**Project Title:** Himachal Pradesh Skill Development Project

**Source of Funding:** ADB Funded: Loan No 3573-IND

**Contract Ref:** **Trainer kit**  
**HPSDP-DoTE/WP/17**

To:

All Interested Bidders (Website Copy)

Sir/Madam:

1. **The Director, Technical Education, Vocational and Industrial Training, Himachal Pradesh, Sundernagar** (Purchaser) hereby requests you to submit price quotation(s) for the supply of the following items:

- (i) **Machinery and Equipment's/Goods related to 'Trainer kit' as per details attached as Annexure- A.**

*If you, however, have been associated with the firm that prepared the design, and specifications of the contract that is subject of this procurement, you shall be disqualified.*

To assist you in the preparation of your price quotation we enclose the necessary 'technical specifications and required quantities'.

2. You must quote for all the items under this request. Price quotations will be evaluated for all the items together and contract awarded to the firm offering the lowest evaluated total cost of all the items.
3. You shall submit **one original of the Price Quotation with the 'Form of Quotation', and clearly marked "Original"**. In addition, you shall also submit **one copy marked as "COPY"**. In case of any discrepancy between the Original and Copy, the original shall prevail. Your quotation in the attached format should be signed, sealed in an envelope and addressed to and delivered to the following address:

**Purchaser's Address:** The Director, Technical Education, Vocational and Industrial Training,  
Himachal Pradesh, Sundernagar, District Mandi – 175018

**Telephone:** 01907-266722, 266120, 266572. E-mail: techedu-hp@nic.in

4. Your quotation in duplicate and written in **English language**, should be accompanied by adequate technical documentation and catalogue(s) and other printed material or pertinent information (in English

language) for each item quoted, including names and addresses of firms providing after-sales service facilities in India.

5. The deadline for receipt of your quotation(s) by the Purchaser at the address indicated in Paragraph 3 is: **25/02/2021 up to 2:15 PM** and shall be **opened at 02:30 PM** on the same day.
6. You shall submit only one set of quotations (Original & Duplicate copy) for the above items. Your quotation must be typed or written in indelible ink and shall be signed by you or your authorized representative. **Without a signature in your Form of Quotation, your quotation will not be considered further.**
7. Your quotation(s) should be submitted as per the following instructions and in accordance with the attached form of Contract. The attached Terms and Conditions of Supply is an integral part of the Contract.
  - (i) **PRICES:** The prices should be quoted for supply and delivery to **Govt. Polytechnic for Women, Rehan, District Kangra, Himachal Pradesh**. Prices shall be quoted in the currency (**Indian National Rupees**) of the Purchaser.
  - (ii) **EVALUATION OF QUOTATIONS:** Offers determined to be substantially responsive to the technical specifications will be evaluated by comparison of their prices. An offer is not substantially responsive if it contains material deviations or reservations to the terms, conditions, and specifications in this 'Request for Quotation', and it will not be considered further. The 'Purchaser' will evaluate and compare only the quotations determined to be substantially responsive. In evaluating the quotations, the 'Purchaser' will adjust for any arithmetical errors as follows:
    - (a) where there is a discrepancy between amounts in figures and in words, the amount in words will govern;
    - (b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern; and
    - (c) if a 'Supplier' refuses to accept the correction, his quotation will be rejected.

In addition to the quoted price, the evaluated price shall include 'Value Added Tax (VAT)/GST' in India.
  - (iii) **AWARD OF PURCHASE ORDER.** The award will be made to the bidder offering the lowest evaluated price and that meets the required standards of technical and financial capabilities. The successful bidder will sign a 'Contract' as per attached form of contract and terms and conditions of supply.
  - (iv) **VALIDITY OF THE OFFER:** Your quotation(s) should be valid for a period of Forty-five (45) days from the deadline for receipt of quotation(s) indicated in Paragraph-5 of this 'Request for Quotation'.
  - (v) **If you withdraw your quotation during the validity period and/or refuse to accept the award of a contract when and if awarded, then you will be excluded from the list of suppliers for the project for two years and the contract will be awarded to the next firm offering the lowest evaluated total cost of all the items (excluding your firm).**
8. Further information can be obtained from:
 

The Director, Technical Education, Vocational and Industrial Training,  
Himachal Pradesh, Sundernagar, District Mandi – 175018.  
Telephone: 01907-266572, 266722  
E-mail: [techedu-hp@nic.in](mailto:techedu-hp@nic.in); Website: <http://techedu.hp.gov.in>
9. The bidder whose quotation has been accepted will be notified of the award of contract through the 'Letter of Acceptance' issued by the 'Purchaser' within 45 days from the date of submission of quotation.
10. The 'Purchaser' intends to apply funds from the 'Asian Development Bank (ADB)' for eligible payments under the 'Purchase Order' resulting from this RFQ.
11. Under ADB's Anticorruption Policy bidders shall observe the highest standard of ethics during the procurement and execution of such contracts. ADB will reject a proposal for award, and will impose sanctions on parties involved, if it determines that the bidder recommended for award or any other party, has engaged in corrupt, fraudulent, collusive, or coercive practices in competing for, or in executing,

the 'Contract'. At the time of submission of your quotation, you should not be in ADB's sanctions list.

12. Please Confirm by e-mail the receipt of this request and whether you will submit the price quotation(s) or not.

Director  
Technical Education  
Vocational and Industrial Training  
Himachal Pradesh, Sundernagar

## FORM OF QUOTATION

(All bidders must fill & Sign this form)

To: \_\_\_\_\_ (Purchaser's Name)  
 \_\_\_\_\_ (Purchaser's Address)  
 \_\_\_\_\_

We offer to execute the \_\_\_\_\_ (name and number of Contract) in accordance with the Conditions of Contract accompanying this Quotation for the Contract Price of \_\_\_\_\_ (amount in words and numbers) (\_\_\_\_\_) (name of currency) \_\_\_\_\_. We propose to complete the delivery of Goods described in the Contract within the following Delivery Time from the Date of Signing of the Contract.

### Prices and Schedules for Supply

S. No.	Item Name	Quantity	Unit Price	Total Price	Delivery Time
1.					
2.					
	<u>Spare Parts</u>	}			
	<u>Tools and Accessories</u>	}			
	<u>Manuals</u>	}			
	<u>Maintenance Requirements</u>	}			

} Specify, if applicable.

This Quotation and your written acceptance will constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Quotation you receive.

We hereby confirm that this Quotation complies with the Validity of the Offer and Warranty conditions imposed by the Request for Quotation document and the Terms and Conditions of Supply, respectively.

We have not been associated with the firm that prepared the design and specifications of the contract that is subject of this request for quotation.

We are not in the ADB sanctions list.

Authorized Signature: \_\_\_\_\_

Name and Title of Signatory \_\_\_\_\_

Name of Supplier: \_\_\_\_\_

Address : \_\_\_\_\_

Phone Number : \_\_\_\_\_

Fax Number, if any \_\_\_\_\_

Email address (optional) \_\_\_\_\_

1. The Bidder must accomplish the Form of Quotation on its letterhead clearly showing the bidder's complete name and address.
2. The bidder must submit copy of Registration Certificate, GST Registration, PAN Card of the firm with his quotation.

## FORM OF CONTRACT

THIS AGREEMENT number \_\_\_\_\_ made on \_\_\_\_\_, 201\_, between  
 \_\_\_\_\_ (hereinafter called "the Purchaser") on the one part and  
 \_\_\_\_\_ (hereinafter called "the Supplier") on the other part.

WHEREAS the Purchaser has requested for quotation for \_\_\_\_\_ (description of goods) to be supplied by Supplier, viz. Contract \_\_\_\_\_, (hereinafter called "Contract") and has accepted the Quotation by the Supplier for the supply of goods under Contract at the sum of \_\_\_\_\_ (\_\_\_\_\_) hereinafter called "the Contract Price".

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The following documents shall be deemed to form and be read and construed as part of this agreement, viz:
  - a) Form of Quotation; Terms and Conditions of Supply, Technical Specifications;
  - b) Addendum (if applicable);
2. Taking into account payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby concludes an Agreement with the Purchaser to execute and complete the supply of goods under the Contract and remedy any defects therein in conformity with the provisions of the Contract.
3. The Purchaser hereby covenants to pay, in consideration of the acceptance of Contract, supply and delivery of the goods and remedying of defects therein, the Contract Price in accordance with Payment Conditions prescribed by the Contract.

IN WITNESS whereof the parties hereto have executed the Contract under the **Laws of India** on the date indicated above.

**Signature and seal of the Purchaser:**

For and on behalf of

\_\_\_\_\_  
 Name of Authorized Representative

**Signature and seal of the Supplier:**

For and on behalf of

\_\_\_\_\_  
 Name of Authorized Representative

## TERMS AND CONDITIONS OF SUPPLY

**Project Name:** Himachal Pradesh Skill Development Project

**Purchaser:** The Director, Technical Education, Vocational and Industrial Training,  
Himachal Pradesh, Sundernagar, District Mandi – 175018

Package name: Embroidery and Sewing Technology related items

Package No. HPSPDP-DOTE/16

1. Schedules for Supply: Attached as **Annexure - A**
2. Fixed Price: The prices indicated in the Form of Quotation are firm and fixed and not subject to any adjustment during contract performance.
3. Delivery Schedule: The delivery should be completed as per above schedule but not exceeding 180 days from the date of signing of contract.
4. Insurance: The Goods supplied under the Contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery. The insurance shall be in an amount equal to 110 percent of the value of the Goods on "All risks" basis.
5. Applicable Law: The Contract shall be interpreted in accordance with the laws of the Purchaser's country.
6. Resolution of Disputes: The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute between them under or in connection with the Contract. In the case of a dispute between the Purchaser and the Supplier, the dispute shall be settled in accordance with the provisions of the **Laws of India within the jurisdiction of the Sundernagar (HP) Court.**
7. Delivery and Documents: Upon delivery, the Supplier shall provide the following documents to the Purchaser:
  - (i) copies of the Supplier's invoice showing goods' description, quantity, unit price, and total amount;
  - (ii) manufacturer's or supplier's warranty certificate; and
  - (iii) certificate of origin.

If goods are coming by courier, supplier shall also provide prior to delivery, copies of documents that will enable Purchaser to receive the goods. The above documents shall be received by the Purchaser at least one week before arrival of the goods and, if not received, the Supplier shall be responsible for any consequent expenses.
8. Payment: Payment of the contract price shall be made in the following manner:
  - a) **80% upon receipt by the Purchaser of the delivered goods on site in accordance with the contract;**
  - b) **10% upon acceptance of the delivered goods by the Purchaser, and**
  - c) **10% will be kept as performance security and shall be released after satisfactory Performance Certificate from the Principal of the user institute i.e. Govt. Polytechnic for women Rehan, District Kangra, Himachal Pradesh after completion of warranty period of 365 days.**
9. Warranty: Goods offered should be covered by manufacturer's warranty for at least 365 Days from the date of delivery to the Purchaser.
10. Defects: All defects will be corrected by the Supplier without any cost to the Purchaser within 30 day from the date of notice by Purchaser. The name and address of service facility where the defects are to be corrected by the supplier within the warranty period are:

Facility: **Govt. Polytechnic for women Rehan.**

Address: **Govt. Polytechnic for women Rehan,**

**District Kangra, Himachal Pradesh**

11. Force Majeure: The supplier shall not be liable for penalties or termination for default if and to the extent that it's delays in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

For purposes of this clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but not restricted to, act of Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by Force Majeure event.

12. Required Technical Specifications: (with attachments as necessary)

- (i) General Description
- (ii) Specific details and technical standards
- (iii) Performance Parameters

Supplier confirms compliance with above specifications.

13. Failure to Perform: The Purchaser may cancel the 'Agreement' if the 'Supplier' fails to deliver the Goods, in accordance with the above terms and conditions, in spite of a 14-day notice given by the 'Purchaser', without incurring any liability to the 'Supplier'.

NAME OF SUPPLIER: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Place: \_\_\_\_\_

Date: \_\_\_\_\_



## **ANNEXURE A**

# **Schedule of supply**

## **Contents**

- List of Goods and Related Services
- Delivery and Completion Schedule
- Technical Specifications
- Drawings

# 1.List of Goods and Related Services

**Package Name: Supply of 'Trainer Kit' for Government Polytechnic (Women) Rehan, Distt.-Kangra(H.P.) to enhance technical and vocational skills among the youth of Himachal Pradesh. HPSDP/DOTE/WP/17; RFQ NO. GPR/10/2021**

Package Name: Trainer kit								Delivery Time (in days): not more than 180	
Item No	Name of Goods or Related Services	Description	Unit of Measurement	Quantity	Unit Price INR	Total price per item INR	Sales and other taxes per item	Total Price (Including GST)	Remarks (Please mention Page Number of detailed information brochure having make and model no.)
1	2	3	4	5	6	7= 5*6	8= 7*@GST%	9=7+8	
1	<b>Micro-processor 8085 Training Kit</b>	<ul style="list-style-type: none"> <li>• 8085 Microprocessor Training Kit with inbuilt power supply.</li> <li>• Built in assembler</li> <li>• 4K Monitor FIRMWARE, 8K user 6264 (expandable upto 56K)</li> <li>• Battery backup</li> <li>• LCD display (40x2 lines)</li> <li>• 46 parallel I/O, 8155/8255 PPI chip with 26 FRC bus.</li> <li>• Serial I/O</li> <li>• Computer keyboard compatible</li> <li>• 101 PC type keyboard for entering user address/data and for commands.</li> <li>• Software: Terminal emulation, Audio Cassette interface</li> <li>• Supporting software on CD/DVD</li> </ul>	No.	10					
2	<b>Micro-processor 8086 Training Kit</b>	<b>Microprocessor 8086 Training Kit</b> <ul style="list-style-type: none"> <li>• Microprocessor Device: 8086 (INTEL)</li> <li>• Operating Frequency: 6.144MHz</li> <li>• Built in assembler</li> <li>• LCD display (40x2 lines)</li> <li>• Computer keyboard compatible</li> <li>• 101 PC type keyboard for entering user address/data and for commands.</li> </ul>	No.	5					

		<ul style="list-style-type: none"> <li>• 8284 clock, 8288 bus controller, 64K RAM, 2x8255 PPI</li> <li>• Availability of Monitor memory storage devices present on microcontroller kit: EEPROM, SRAM for user Data, Battery Backup RAM</li> </ul>							
3	<b>8 bit 1:8- Line Demultiplexer using IC 74138 Trainer Kit</b>	<b>Training Board for the study of 1:8 Line Demultiplexer (digital).</b> Power Supply : SMPS based +5V DC Logic levels : +5V : HIGH(Logic 1) 0V : LOW (Logic 0) Logic Input: 06nos. Through SPDT Switches Logic Output: 05nos. Through LEDs. LED Indication : LED will be ON (glow) for 1 state and will be OFF for 0 state. Banana Sockets for connection: 2mm	No.	8					
4	<b>Flip Flop Trainer Kit.</b>	<ul style="list-style-type: none"> <li>• Flip Flop trainer kit support to construct J-K Flip flop, R-S Flip flop using NAND gates and to verify their respective truth tables.</li> <li>• Built in fixed power supply +5V @250mA</li> </ul> <p><i>Should be able to construct and Study the following Flip Flops:</i></p> <ul style="list-style-type: none"> <li>• R-S Flip</li> <li>• R-S Flip- Flop using NAND &amp; NOR Gate</li> <li>• R-S Flip- Flop using NAND Gate</li> <li>• J-K Flip – Flop</li> <li>• JK Flip – Flop using RS Flip – Flop</li> <li>• J-K Flip – Flop using NAND Gate</li> <li>• J-K Master Slave Flip-Flop using gates</li> <li>• Master Slave J-K Flip-Flop using IC 7476</li> <li>• D-type Flip – Flop</li> <li>• T-type Flip – Flop</li> </ul>	No.	5					

		<ul style="list-style-type: none"> <li>• D &amp; T Flip – Flop using RS Flip – Flop</li> <li>• Low and high points using SPDT switches are provided as inputs</li> <li>• LEDs are provided as outputs</li> <li>• Banana Sockets for connection: 2mm</li> <li>• Adequate number of high quality patch cords</li> </ul>							
5	<b>Multiplexing of two BCD numbers to seven segment display trainer</b>	<ul style="list-style-type: none"> <li>• Trainer Kit for Multiplexing of two BCD numbers to seven segment display</li> <li>• Built in Power supply</li> <li>• Built in 7 Segment Displays</li> <li>• All requisite accessories and cords.</li> </ul>	No.	5					
6	<b>Raspberry Pi 3B+ with Power Supply &amp; Case</b>	<ul style="list-style-type: none"> <li>• Includes Made in UK Raspberry Pi 3 B+ (B Plus) with 1.4 GHz 64-bit Quad-Core Processor, 1 GB RAM</li> <li>• Dual Band 2.4GHz and 5GHz IEEE 802.11.b/g/n/ac Wireless LAN, Enhanced Ethernet Performance</li> <li>• 16 GB Micro SD Card (Class 10) Pre-loaded with NOOBS, USB MicroSD Card Reader</li> <li>• 2.5 A USB Power Supply with Micro USB Cable - Specially designed for the Raspberry Pi 3 B+</li> <li>• Premium Raspberry Pi 3 B+ Case, High Quality HDMI Cable, 2 x Heat Sinks, GPIO Quick Reference Card</li> <li>• One Full-Size Large Breadboard</li> <li>• M/M and M/F Jumper Wires = 20 each</li> <li>• Quick-Start Guide</li> <li>• Included power supply and case</li> </ul>	No.	10					
7	<b>Arduino Uno R3 Board with USB Cable</b>	<b>Arduino Uno R3 ATmega328PU Board</b> <ul style="list-style-type: none"> <li>• Flash Memory: 32 KB (ATmega328)</li> <li>• SRAM: 2 KB (ATmega328)</li> <li>• EEPROM: 1 KB (ATmega328)</li> <li>• Clock Speed: 16 MHz</li> <li>• Digital I/O Pins: 14 (of which 6 provide PWM output)</li> <li>• Input Voltage: 7-12V</li> <li>• Operating Voltage: 5V</li> </ul>	No.	5					

		<ul style="list-style-type: none"> <li>• USB interface</li> <li>• USB A to B Cable</li> <li>• Included power supply</li> <li>• Quick-Start Guide</li> </ul>							
8	<b>HDMI to VGA Converter</b>	<ul style="list-style-type: none"> <li>• Connectors: Input 1 x HDMI Type A Male, Output 1 x HDB-15 Female</li> <li>• Support video VGA, SVGA, XGA, SXGA, UXGA and resolutions up to 1920x1200 (PC) / 1080p (HDTV)</li> </ul>	No.	5					
9	<b>HDMI- HDMI Cable 1.8m</b>	<ul style="list-style-type: none"> <li>• High-Speed HDMI Cable</li> <li>• HDMI A Male to A Male Cable: Supports Ethernet, 3D, 4K video and Audio Return Channel (ARC)</li> <li>• Cable Length: 6 feet (1.8 meters)</li> </ul>	No.	5					
10	<b>Soldering Station</b>	<ul style="list-style-type: none"> <li>• Soldering and de-soldering station</li> <li>• Type: Temperature controlled</li> <li>• Voltage: 220V/50HZ</li> <li>• Max Power Consumption: 150 - 300W</li> <li>• Temperature range: 50° C to 450° C</li> <li>• Power cord length (Minimum): 1.2 Mtrs</li> <li>• Iron tip: MT1, conical, 0.125"</li> <li>• Peg hook for hanging the Soldering Iron,</li> <li>• Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning</li> </ul>	No.	7					
11	<b>Bread Boards</b>	<ul style="list-style-type: none"> <li>• Bread Boards: 800 Tie Points, Self Adhesive</li> <li>• Adhesive sheet on the back side of the board such that multiple breadboards can be spliced together</li> <li>• Should be fit for jumper wire of 0.8 mm diameter - standard 2.54 mm hole spacing</li> <li>• Should be reusable for fast build a prototype of an electronic circuit</li> </ul>	No.	15					
<b>Total</b>									

	Total price per item (INR)	Total Price INR (Including GST)
	(7= 5*6)	(9=7+8)
<b>Grand Total</b>		
<b>Grand Total (Without Tax) in Words: -</b>		
<b>Grand Total (With Tax) in Words: -</b>		

## 2. Delivery and Completion Schedule

The delivery period shall start as of date of Signing the Contract

Item No	Description of Goods or Related Services	Delivery Schedule (Duration)	Location	Required Arrival Date of Goods or Completion Date for Related Services
	<b>Package Name: - Trainer kit</b> <b>Package No.:- HPSPDP-DOTE/WP/17</b>	Within 180 Days from the Signing of the contract.	<b>Government Polytechnic(Women), Rehan District-Kangra, Himachal Pradesh</b>	Within 180 Days from the Signing of the contract.

### 3. Technical Specifications

**Package Name: - Trainer kit**

**Installation & Training:** To be supplied and installed at the Govt Polytechnic (Women) Rehan in Himachal Pradesh, • Training to be provided as required by the users

Item No.	Name of Goods or Related Services	Technical Specifications of Item and/or Bureau of Indian Standards (BIS) (if applicable) reference	Features	Accessories	Spare parts	Documents	Warranty of Equipment/ parts
1.	<b>Micro-processor 8085 Training Kit</b>	<ul style="list-style-type: none"> <li>• 8085 Microprocessor Training Kit with inbuilt power supply.</li> <li>• Built in assembler</li> <li>• 4K Monitor FIRMWARE, 8K user 6264 (expandable upto 56K)</li> <li>• Battery backup</li> <li>• LCD display (40x2 lines)</li> <li>• 46 parallel I/O, 8155/8255 PPI chip with 26 FRC bus.</li> <li>• Serial I/O</li> <li>• Computer keyboard compatible</li> <li>• 101 PC type keyboard for entering user address/data and for commands.</li> <li>• Software: Terminal emulation, Audio Cassette interface</li> <li>• Supporting software on CD/DVD</li> </ul>	Standard Features	standard	standard	<ul style="list-style-type: none"> <li>• User Manual of 8085 processor kit</li> </ul>	<ul style="list-style-type: none"> <li>• 03 year comprehensive on-site warranty from the date of Installation</li> </ul>
2.	<b>Micro-processor 8086 Training Kit</b>	<b>Microprocessor 8086 Training Kit</b> <ul style="list-style-type: none"> <li>• Microprocessor Device: 8086 (INTEL)</li> <li>• Operating Frequency: 6.144MHz</li> <li>• Built in assembler</li> <li>• LCD display (40x2 lines)</li> <li>• Computer keyboard compatible</li> <li>• 101 PC type keyboard for entering user address/data and for commands.</li> <li>• 8284 clock, 8288 bus controller, 64K RAM, 2x8255 PPI</li> </ul>	Standard Features	standard	standard	<ul style="list-style-type: none"> <li>• User Manual of 8086 processor kit</li> </ul>	<ul style="list-style-type: none"> <li>• 03 year comprehensive on-site warranty from the date of Installation</li> </ul>



		<ul style="list-style-type: none"> <li>• Availability of Monitor memory storage devices present on microcontroller kit: EEPROM, SRAM for user Data, Battery Backup RAM</li> </ul>					
3.	<b>8 bit 1:8- Line Demultiplexer using IC 74138 Trainer Kit</b>	<p><b>Training Board for the study of 1:8 Line Demultiplexer (digital).</b></p> <p>Power Supply : SMPS based +5V DC</p> <p>Logic levels : +5V : HIGH(Logic 1) 0V : LOW (Logic 0)</p> <p>Logic Input: 06nos. Through SPDT Switches</p> <p>Logic Output: 05nos. Through LEDs.</p> <p>LED Indication : LED will be ON (glow) for 1 state and will be OFF for 0 state.</p> <p>Banana Sockets for connection: 2mm</p>	standard	Operating manual, Patch Cards adequate number of patch cards	standard	Standard Operating manual	standard
4.	<b>Flip Flop Trainer Kit.</b>	<ul style="list-style-type: none"> <li>• Flip Flop trainer kit support to construct J-K Flip flop, R-S Flip flop using NAND gates and to verify their respective truth tables.</li> <li>• Built in fixed power supply +5V @250mA</li> </ul> <p><i>Should be able to construct and Study the following Flip Flops:</i></p> <ul style="list-style-type: none"> <li>• R-S Flip</li> <li>• R-S Flip- Flop using NAND &amp; NOR Gate</li> <li>• R-S Flip- Flop using NAND Gate</li> <li>• J-K Flip – Flop</li> <li>• JK Flip – Flop using RS Flip – Flop</li> <li>• J-K Flip – Flop using NAND Gate</li> <li>• J-K Master Slave Flip-Flop using gates</li> <li>• Master Slave J-K Flip-Flop using IC 7476</li> <li>• D-type Flip – Flop</li> <li>• T-type Flip – Flop</li> <li>• D &amp; T Flip – Flop using RS Flip – Flop</li> <li>• Low and high points using SPDT switches are provided as inputs</li> <li>• LEDs are provided as outputs</li> <li>• Banana Sockets for connection: 2mm</li> <li>• Adequate number of high quality patch cords</li> </ul>	standard	Operating manual, adequate number of patch cards	standard	Standard Operating manual	standard

5.	<b>Multiplexing of two BCD numbers to seven segment display trainer</b>	<ul style="list-style-type: none"> <li>• Trainer Kit for Multiplexing of two BCD numbers to seven segment display</li> <li>• Built in Power supply</li> <li>• Built in 7 Segment Displays</li> <li>• All requisite accessories and cords.</li> </ul>	standard	Operating manual, Patch Cards adequate number of patch cards	standard	Standard Operating manual	standard
6.	<b>Raspberry Pi 3B+ with Power Supply &amp; Case</b>	<ul style="list-style-type: none"> <li>• Includes Made in UK Raspberry Pi 3 B+ (B Plus) with 1.4 GHz 64-bit Quad-Core Processor, 1 GB RAM</li> <li>• Dual Band 2.4GHz and 5GHz IEEE 802.11.b/g/n/ac Wireless LAN, Enhanced Ethernet Performance</li> <li>• 16 GB Micro SD Card (Class 10) Pre-loaded with NOOBS, USB MicroSD Card Reader</li> <li>• 2.5 A USB Power Supply with Micro USB Cable - Specially designed for the Raspberry Pi 3 B+</li> <li>• Premium Raspberry Pi 3 B+ Case, High Quality HDMI Cable, 2 x Heat Sinks, GPIO Quick Reference Card</li> <li>• One Full-Size Large Breadboard</li> <li>• M/M and M/F Jumper Wires = 20 each</li> <li>• Quick-Start Guide</li> <li>• Included power supply and case</li> </ul>	Standard features	<ul style="list-style-type: none"> <li>• Power supply and case</li> </ul>	standard	Standard Operating manual	standard
7.	<b>Arduino Uno R3 Board with USB Cable</b>	<b>Arduino Uno R3 ATmega328PU Board</b> <ul style="list-style-type: none"> <li>• Flash Memory: 32 KB (ATmega328)</li> <li>• SRAM : 2 KB (ATmega328)</li> <li>• EEPROM: 1 KB (ATmega328)</li> <li>• Clock Speed: 16 MHz</li> <li>• Digital I/O Pins: 14 (of which 6 provide PWM output)</li> <li>• Input Voltage: 7-12V</li> <li>• Operating Voltage: 5V</li> <li>• USB interface</li> <li>• USB A to B Cable</li> <li>• Included power supply</li> <li>• Quick-Start Guide</li> </ul>	USB Cable, power supply	standard	standard	Standard Operating manual	standard
8.	<b>HDMI to VGA Converter</b>	<ul style="list-style-type: none"> <li>• Connectors: Input 1 x HDMI Type A Male, Output 1 x HDB-15 Female</li> <li>• Support video VGA, SVGA, XGA, SXGA, UXGA and resolutions up 1920x1200(PC) /1080p(HDTV)</li> </ul>	standard	standard	standard	Standard Operating manual	standard

9.	<b>HDMI- HDMI Cable 1.8m</b>	<ul style="list-style-type: none"> <li>• High-Speed HDMI Cable</li> <li>• HDMI A Male to A Male Cable: Supports Ethernet, 3D, 4K video and Audio Return Channel (ARC)</li> <li>• Cable Length: 6 feet (1.8 meters)</li> </ul>	standard	standard	standard	Standard Operating manual	standard
10.	<b>Soldering Station</b>	<ul style="list-style-type: none"> <li>• Soldering and de-soldering station</li> <li>• Type: Temperature controlled</li> <li>• Voltage: 220V/50HZ</li> <li>• Max Power Consumption:150 - 300W</li> <li>• Temperature range: 50° C to 450° C</li> <li>• Power cord length (Minimum): 1.2 Mtrs</li> <li>• Iron tip: MT1, conical, 0.125"</li> <li>• Peg hook for hanging the Soldering Iron,</li> <li>• Firm Stand for placing the soldering iron during use with built in Sponge for Tip Cleaning</li> </ul>	standard	standard	standard	Standard Operating manual	standard
11.	<b>Bread Boards</b>	<ul style="list-style-type: none"> <li>• Bread Boards: 800 Tie Points, Self Adhesive</li> <li>• Adhesive sheet on the back side of the board such that multiple breadboards can be spliced together</li> <li>• Should be fit for jumper wire of 0.8 mm diameter - standard 2.54 mm hole spacing</li> <li>• Should be reusable for fast build a prototype of an electronic circuit</li> </ul>	standard	standard	standard	Standard Operating manual	standard

## **4. Drawings**

*Not Applicable*