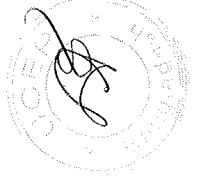


Materials Delivery Location: UCEP Barishal TVET Institute.

Sl.	Name of the Item	Specification	QTY	UoM	Unit Price		Total Price	
					BDT		BDT	
1	Panel Type Trainer Steel Table	Table Dimension: Table bed: L=48 inch x W=28 inch, Table H= 26 inch + 2 inch wheel=4pcs, break type, Table Features: a) Build with PLC panel on the tabletop bed (L48=inch x W=8 inch, h= 28 inch, Table Features: b) Build with 19 inch Monitor and CPU mounting kit, Table Features: c), Build with induction motor mounting paddle, MS- SWG 18, powder coated, with all necessary. component mounting, cutting and hole, Brand: BD, Made in BD	1	Set				
2	Induction Motor	400W, 3phase 440	2	Pcs				
3	Heating Cooling Experiment Panel	Panel Size: 10 inch x 12 inch, including 200W Heater, Cooling Fan, RTD Sensor, and Heater+Cooling Fan Indicator	1	Set				
4	Pneumatic Control System	Solenoid Valve (Airtech/SMC) 0.15-0.8 MPa, 24vdc – 3nos Pneumatic Cylinder, SMC, MA20x40, 0.7MPa – 2nos Air Control Regulator 10bar – 1no, Pressure Transmitter (WIKA)- 0-10 bar, 4-20ma, 24vdc – 1no Made in China	1	Set				
5	Air Compressor	Max Pressure: 10bar/150psi, Tank Capacity: 12L, Width: 26cm, Frequency: 50-60Hz, Height: 60cm Speed: 2800RPM, Air Delivery: 200L/min, Length: 58cm, Power: 1HP, Voltage: 220-240V Includes: Air Filter, Oil Bottle, 2 air couplers, Brand: China, Made in China	1	Set				
6	Onboard Spare Parts and Fixing Accessories	Control Cable: 0.5 rm = 1coil, Power Cable: 2rm = 40 yards Relay 24vdc, 14pin= 6pcs,Power Supply 24vdc, 5A=2pcs MCB, 16A = 4pcs,Proximity sensor (PNP-NPN)- 2pcs, Photo sensor (PNP-NPN) – 1pcs RTC Fuse2A= 2pcs, Push Switch=3pcs Toggle Switch=2pcs Limit Switch=1pcs Rotatory encoder= 1pcs Magnetic Contact = 3pcs, Overload Relay=1pcs Industrial Connector=30pcs Potentiometer 5K=1pcs Cable tie and cable lugs Toggle Switch=2pcs, Industrial Tower Lamp-R,Y,B with buzzer Signal=1set, Operator Panel=1 set, Network Router=1pcs Brand: China, Made in China	1	Lot				
7	Desktop PC	Processor: Intel 12th Gen Core i5-12400 RAM: 16GB DDR4 3200MHz, Mother Board: MSI PRO H610M-E DDR4 mATX Motherboard, Storage: 512GB M.2 PCIe Gen4 NVMe SSD Monitor: 21.45" 100Hz Full HD Business Monitor UPS: Power 800VA Offline, Monitor Moving ARM	1	Set				
8	SIMATIC S7-1200 CPU, Including Programming Software TIA-V19 Floating Licence, Lifetime	CPU 1214C, compact CPU, DC/DC/DC, onboard I/O: 14 DI 24 V DC; 10 DO 2 A; 2 AI 0-10 V DC, power supply: AC 85-264 V AC at 47-63 Hz, Brand: SIEMENS Germany, Made in China	1	No				
9	SIMATIC S7-1200 Analog Module	SM 1234 analog input/output module SM 1234 AI 4 x 13 bit / AQ 2 x 14 bit. Part No number. 6ES7234-4HE32-0XB0. Dimensions W x H x D, Brand: SIEMENS Germany, China	1	No				
10	SIMATIC S7-1200, Communication Module	SIMATIC S7-1200, Communication Module CM 1241, RS422/485, 9-pole D-sub, Part No: 6ES7241-1CH32-0XB0, Brand: SIEMENS Germany, China	1	No				

11	SIMATIC S7-1200 Temperature Module	S Analog Input Module SM1231 Part No:6ES7231-5PD32-0XB0, 4XAI RTD Brand: SIEMENS Germany, China	1	No	
12	Power Supply for S7 1200 PLC Unit	SIEMENS Power Supply- SITOP PSU100S – 1no power input: 120/230 V AC output: 24 V DC/5 A Siemans Germany, Made in Austria	1	Pcs	
13	Human Machine Interface HMI with Programming Software	DOP-110IG Series,DOP-100 Series, Display Size and Type:10.4" TFT LCD Display Colors:16-bit, Resolution (pixels):800 x 600 Luminance (cd/m2):300, MCU:ARM Cortex-A8 (800 MHz) Flash ROM (Bytes)256 RAM (MB)256 USB1 USB Slave Ver 2.0 / 1 USB Host Ver 2.0, COM1RS-232, COM2RS-232 (supports hardware flow control) / RS-485, COM3RS-232 (supports hardware flow control) / RS-422 / RS-485 Brand: Taiwan, Made in China	1	No	
14	SINAMICS V20 VFD	Part No:6SL3210-5BB21-5UV1,Rated Power:1.5KW;Nominal ...3 phase Output, Input AC220V , Brand: SIEMENS Germany, Made in China	1	No	
15	Delta 750W AC servo systems(Drive+Motor+All Connectiopn Cable)	ASDA-B2 or ASDA-A2 series, offer high-precision motion control for industrial automation, featuring 220VAC input, 3000 RPM rated speed, and a 2.39 Nm rated torque (7.16 Nm peak),Brand: Delta Taiwan, Made in China	1	No	
16	Plug, female, 2-pole	Type 1, grid size 5.08 mm, scope of supply: 10 plugs	2	No	
17	PLC Lab Setup, with 10 days Skill Training provide to the trainers.	Skill Training Content and Job Sheets (Practical Tasks) Include another file in details (course outline details)	01	Lot	
Sub Total without VAT					
Add VAT as per Govt Rules					
Grand Total including VAT & AIT as per Govt Rules					



For Barisal Region

Job Sheet 01 — Create New TIA Portal Project, Objective: Create and organize a standard project

Task: New project → add S7-1200 CPU → set IP → compile, Expected Result: Project compiles with no errors; PLC visible online (if connected)

Job Sheet 02 — Digital Input Wiring Verification, Objective: Verify DI works, Task: Wire push button to I0.0 (or assigned) → monitor in watch table, Expected Result: Input changes correctly ON/OFF

Job Sheet 03 — Digital Output Lamp Control, Objective: Control an output, Task: Program I0.0 → Q0.0 direct logic, Expected Result: Lamp turns ON when button pressed

Job Sheet 04 — Seal-in (Latch) Start/Stop Motor, Objective: Build classic motor latch

Task: Start PB + Stop PB + latch with M0.0 Expected Result: Motor stays ON after start, stops with Stop PB

Job Sheet 05 — TON Timer Delay ON, Objective: Delay output ON by 5s, Task: Use TON; I0.0 triggers → after 5s Q0.0 ON, Expected Result: Output turns ON after delay

Job Sheet 06 — TP Pulse Output, Objective: Generate fixed pulse, Task: Press PB → output pulse 2s

Expected Result: Output ON only for 2 seconds

Job Sheet 07 — Counter CTU Object Count Objective: Count up to 20

Task: Prox input increments; reset button resets

Expected Result: Count displayed; stops at target if required

Job Sheet 08 — One-Pulse per Object (Edge Detect)

Objective: Avoid multiple counts per object

Task: Implement rising-edge logic (one count per entry)

Expected Result: Accurate counting even if sensor stays ON

Job Sheet 09 — Analog Scaling 0–10V to 0–100%



Objective: Convert raw to %

Task: Read AI raw → scale to 0–100 on HMI

Expected Result: Correct % display for test voltage

Job Sheet 10 — Analog Output 0–10V from HMI Setpoint

Objective: Speed reference output

Task: HMI setpoint (0–100%) → AO raw

Expected Result: AO changes smoothly with setpoint

Job Sheet 11 — Basic HMI Screen: Start/Stop + Status

Objective: Build operator screen

Task: Create buttons + lamp + numeric display

Expected Result: Operator can control and see status

Job Sheet 12 — HMI Alarm (Basic)

Objective: Simple alarm message

Task: Low pressure / fault bit triggers alarm

Expected Result: Alarm appears and can be acknowledged

Job Sheet 13 — VFD Run/Stop using PLC DO

Objective: Control VFD run

Task: Map PLC output to VFD run input (demo)

Expected Result: VFD starts/stops as commanded



Job Sheet 14 — VFD Speed Control using AO

Objective: VFD speed reference

Task: AO 0–10V to VFD AI; limit to safe range

Expected Result: Speed changes according to setpoint

Job Sheet 15 — Solenoid Valve Sequence (2 cylinders demo)

Objective: Step sequence control

Task: A+ → delay → B+ → delay → B- → delay → A-

Expected Result: Sequence runs reliably with start/stop

Job Sheet 16 — Pressure Display on HMI, Objective: Process value display

Task: Read analog pressure → scale to bar → show on HMI

Expected Result: Correct bar reading for test input

Job Sheet 17 — PID Heating Control (Basic)

Objective: Maintain temperature at SP

Task: PV from analog; PID output to heater control (PWM/analog)

Expected Result: Temperature moves toward setpoint with stable behavior

Job Sheet 18 — Watch Table Debugging Checklist

Objective: Troubleshoot a faulty logic

Task: Identify why motor doesn't start using watch/force

Expected Result: Root cause found (interlock, wrong address, etc.)

Job Sheet 19 — Enable Web Server + View Tags

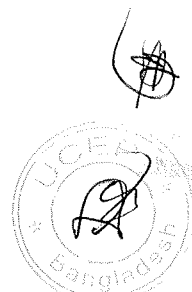
Objective: Access PLC web server, Task: Enable web server; login; view diagnostics

Expected Result: Web server opens and shows PLC info

Job Sheet 20 — Simple User Webpage: Toggle Output, Objective: Web control

Task: Create user page with ON/OFF button for a load

Expected Result: Load can be controlled from browser



Job Sheet 21 — Factory I/O Sorting (2 types), Objective: Conveyor sorting logic

Task: Detect product type → actuate diverter at right time

Expected Result: Correct sorting accuracy, Job Sheet 22 — Node-RED MQTT + Ubidots + Remote Motor Control, Objective: End-to-end IoT demo

Task: Publish PLC values → Node-RED → Ubidots; subscribe command → PLC motor control

Expected Result: Live dashboard + remote motor ON/OFF works

