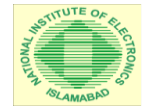




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**TENDER NO. 05/2020-21/NIE**  
**MISC. EQUIPMENT, PARTS, TOOLS AND ACCESSORIES FOR AUTOMOTIVE LAB**

<b>S. No.</b>	<b>Name of Item</b>	<b>Qty</b>	<b>Unit Price</b>	<b>Total Price</b>
1.	<p><b>AI Development GPU Based Workstation with standard accessories and following specifications:</b></p> <p><b>Make: Any Brand (must come with warranty, and all associated cables/connectors etc.)</b></p> <ul style="list-style-type: none"><li>• Processor: 10 Cores, 2019 model or later</li><li>• Dual RTX 3090 (24GB, 10496 CUDA Cores)</li><li>• 64 GB DDR4 Ram (space must be available to expand it up-to 128GB in the future)</li><li>• 500GB SSD for Operating System</li><li>• 2TB Hard Disk for storage</li><li>• CD/DVD/Bluray Combo Drive</li><li>• Liquid Cooling</li><li>• Appropriate Power Supply.</li><li>• Dual boot: Genuine Windows 10 Professional and Ubuntu</li></ul>	1		
2.	<p><b>AI Single Board Developer Kit, with acrylic box/casing and microSD cards (32GB) with standard accessories and following specifications:</b></p> <p><b>Make: NVIDIA Jetson OR Equivalent (must come with warranty)</b></p> <ul style="list-style-type: none"><li>• GPU: Maxwell Architecture, 128 CUDA Cores</li><li>• CPU: Quad Core ARM A57 @ 1.43 GHz</li><li>• Memory: 4-GB 64 Bit LPDDR4 25.6GB/s</li><li>• Storage: MicroSD capable</li><li>• Video Encode: 4K @ 30   4x 1080p @ 30   9x 720p @ 30 (H.264/H.265)</li><li>• Video Decode: 4K @ 60   2x 4K @ 30   8x 1080p @ 30   18x 720p @ 30 (H.264/H.265)</li><li>• Camera: 2x MIPI CSI-2 DPHY lanes</li><li>• Connectivity: Gigabit Ethernet, M.2 Key E</li><li>• Display: HDMI and display port</li><li>• USB: 4x USB 3.0, USB 2.0 Micro-B</li><li>• GPIO, I<sup>2</sup>C, I<sup>2</sup>S, SPI, UART</li><li>• 69 mm x 45 mm, 260-pin edge connector</li></ul>	2		

3.	<p><b>High End, AI Single Board Developer Kit, with acrylic box/casing and Micro SD Card (32GB) with standard accessories and following specifications:-</b></p> <p><b>Make: NVIDIA Jetson OR Equivalent (must come with warranty)</b></p> <ul style="list-style-type: none"> <li>• GPU: Volta architecture with 384 CUDA cores and 48 Tensor cores</li> <li>• CPU: 6-core NVIDIA Carmel ARM@v8.2 64-bit CPU 6 MB L2 + 4 MB L3</li> <li>• DL Accelerator: 2x NVDLA Engines</li> <li>• Vision Accel: 7-Way VLIW Vision Processor</li> <li>• Memory: 8 GB 128-bit LPDDR4x @ 51.2GB/s</li> <li>• Storage: microSD</li> <li>• Video Encode: 2x 4K @ 30   6x 1080p @ 60   14x 1080p @ 30 (H.265/H.264)</li> <li>• Video Decode: 2x 4K @ 60   4x 4K @ 30   12x 1080p @ 60   32x 1080p @ 30 (H.265) 2x 4K @ 30   6x 1080p @ 60   16x 1080p @ 30 (H.264)</li> <li>• Camera: 2x MIPI CSI-2 DPHY lanes</li> <li>• Connectivity: Gigabit Ethernet, M.2 Key E (WiFi/BT included), M.2 Key M (NVMe)</li> <li>• Display: HDMI and display port</li> <li>• USB: 4x USB 3.1, USB 2.0 Micro-B</li> <li>• GPIO, I<sup>2</sup>C, I<sup>2</sup>S, SPI, UART</li> <li>• 103 mm x 90.5 mm x 34.66 mm</li> </ul>	1		
4.	<p><b>Single Board Computer for Application Development (4GB), with casing and Micro SD Cards (32 GB) with standard accessories and following specifications:-</b></p> <p><b>Make: Raspberry Pi 4 OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz</li> <li>• 4GB LPDDR4-2400 SDRAM (depending on model)</li> <li>• 2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE</li> <li>• Gigabit Ethernet</li> <li>• 2 USB 3.0 ports; 2 USB 2.0 ports.</li> <li>• Raspberry Pi standard 40 pin GPIO header (fully backwards compatible with previous boards)</li> <li>• 2 × micro-HDMI ports (up to 4kp60 supported)</li> <li>• 2-lane MIPI DSI display port</li> <li>• 2-lane MIPI CSI camera port</li> <li>• 4-pole stereo audio and composite video port</li> <li>• H.265 (4kp60 decode), H264 (1080p60 decode, 1080p30 encode)</li> </ul>	2		

	<ul style="list-style-type: none"> <li>• OpenGL ES 3.0 graphics</li> <li>• Micro-SD card slot</li> <li>• Power over Ethernet (PoE) enabled</li> <li>• Operating temperature: 0 – 50 degrees C ambient</li> </ul>			
5.	<p><b>Camera Module (compatible with single board computer with serial#2,3,4) with standard accessories and following specifications:-</b></p> <p><b>Make: Any Reputed Brand</b></p> <ul style="list-style-type: none"> <li>• 8 Mega Pixels</li> <li>• IMX219 sensor</li> <li>• Video: 1080p30, 720p60 and VGA90</li> <li>• Pic: 3820 x 2464 pixels</li> <li>• 160 Degree FOV</li> </ul>	5		
6.	<p><b>DIY Robot/Vehicle Kit with standard accessories and following specifications:-</b></p> <p><b>Make: Any Reputed Brand</b></p> <p><b>Must Include:-</b></p> <ul style="list-style-type: none"> <li>• Ultrasonic Sensors</li> <li>• Camera</li> <li>• Complete Vehicle chassis with wheels and mounting boards etc.</li> <li>• Servo motors</li> <li>• Battery</li> <li>• Power Supply</li> <li>• Jumper Wires (Male to Male, Female to Female, 100 each)</li> </ul>	2		
7.	<p><b>Monitor with standard accessories and following specifications:-</b></p> <p><b>Make: Any Reputed Brand</b></p> <ul style="list-style-type: none"> <li>• LED</li> <li>• 20-21"</li> </ul>	2		
8.	<p><b>Keyboard with standard accessories and following specifications:-</b></p> <p><b>Make: A4 Tech OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• Backlit</li> <li>• Ergonomic/Anti RSI</li> <li>• Include function keys.</li> <li>• Wired</li> </ul>	1		
9.	<p><b>Mouse with standard accessories and following specifications:-</b></p>	3		

	<p><b>Make: A4 Tech OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• Wireless</li> <li>• 6 buttons</li> <li>• Optical.</li> <li>• Right Hand Fit</li> </ul>			
10.	<p><b>AI Development Laptop Workstation (must come with warranty) with standard accessories and following specifications:-</b></p> <p><b>Make: HP Pavilion OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• Processor: 6 Cores, 2019 model or later</li> <li>• 16GB DDR4 RAM</li> <li>• 256GB SSD</li> <li>• 1 TB HDD</li> <li>• 6-GB GTX 1660 Ti, GDDR6</li> <li>• 15.6" Full HD Display.</li> <li>• Genuine MS Windows 10 Pro</li> </ul>	2		
11.	<p><b>Microcontroller Development Board, with connector/programming cable with warranty) with standard accessories and following specifications:-</b></p> <p><b>Make: STMicroelectronics OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• STM32F756ZGT6U</li> <li>• 3 user LEDs</li> <li>• 2 user and reset push-buttons</li> <li>• 32.768 kHz crystal oscillator</li> <li>• Board connectors: SWD ST Zio expansion connector including ARDUINO® Uno V3 ST morpho expansion connector</li> <li>• Flexible power-supply options: ST-LINK, USB V<sub>BUS</sub> or external sources</li> <li>• On-board ST-LINK debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port, and debug port</li> <li>• Comprehensive free software libraries and examples available with the STM32Cube MCU Package</li> <li>• Support of a wide choice of Integrated Development Environments (IDEs) including IAR™, Keil®, and STM32CubeIDE</li> </ul> <p><b>Board-specific features:</b></p> <ul style="list-style-type: none"> <li>• External or internal SMPS to generate V<sub>core</sub> logic supply</li> <li>• Ethernet compliant with IEEE-802.3-2002</li> <li>• USB OTG full speed or device only</li> <li>• Board connectors: USB with Micro-AB or USB Type-C™ Ethernet RJ45</li> </ul>	2		

	<ul style="list-style-type: none"> <li>• Arm® Mbed Enabled™ compliant</li> </ul>			
12.	<p><b>Microcontroller Development Board, with connector/programming cable with standard accessories and following specifications:-</b></p> <p><b>Make: STMicroelectronics OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• STM32L433RC</li> <li>• 1 user LED shared with ARDUINO®</li> <li>• 1 user and 1 reset push-buttons</li> <li>• 32.768 kHz crystal oscillator</li> <li>• Board connectors: ARDUINO® Uno V3 expansion connector ST morpho extension pin headers for full access to all STM32 I/Os</li> <li>• Flexible power-supply options: ST-LINK, USB V<sub>BUS</sub>, or external sources</li> <li>• On-board ST-LINK debugger/programmer with USB re-enumeration capability: mass storage, Virtual COM port and debug port</li> <li>• Comprehensive free software libraries and examples available with the STM32Cube MCU Package</li> <li>• Support of a wide choice of Integrated Development Environments (IDEs) including IAR Embedded Workbench®, MDK-ARM, and STM32CubeIDE</li> </ul> <p><b>Board-specific features:</b></p> <ul style="list-style-type: none"> <li>• External SMPS to generate V<sub>core</sub> logic supply</li> <li>• 24 MHz HSE</li> <li>• Board connectors: External SMPS experimentation dedicated connector Micro-AB or Mini-AB USB connector for the ST-LINK MIPI® debug connector</li> <li>• Arm® Mbed Enabled™ compliant</li> </ul>	2		
13.	<p><b>IOT Microcontroller Development Board, with connector/programmer with standard accessories and following specifications:</b></p> <p><b>Make: Espressif OR Equivalent</b></p> <p><b>Board:</b></p> <ul style="list-style-type: none"> <li>• 240 MHz dual core Tensilica LX6 microcontroller with 600 DMIPS</li> <li>• Integrated 520 KB SRAM</li> <li>• Integrated 802.11BGN HT40 Wi-Fi transceiver, baseband, stack and LWIP</li> <li>• Integrated dual mode Bluetooth (classic and BLE)</li> <li>• 16 MByte flash</li> <li>• -40°C to +125°C operating temperature</li> <li>• On-board PCB antenna / IPEX connector for external antenna</li> </ul> <p><b>Sensor</b></p> <ul style="list-style-type: none"> <li>• Ultra-low noise analog amplifier</li> </ul>	2		

	<ul style="list-style-type: none"> <li>• Hall sensor</li> <li>• 10x capacitive touch interface</li> <li>• 32 kHz crystal oscillator</li> </ul> <p><b><u>GPIO</u></b></p> <ul style="list-style-type: none"> <li>• 3 x UARTs, including hardware flow control</li> <li>• 3 x SPI</li> <li>• 2 x I2S</li> <li>• 12 x ADC input channels</li> <li>• 2 x DAC</li> <li>• 2 x I2C</li> <li>• PWM/timer input/output available on every GPIO pin</li> <li>• OpenOCD debug interface with 32 kB TRAX buffer</li> <li>• SDIO master/slave 50 MHz</li> <li>• Supports external SPI flash up to 16 MB</li> <li>• SD-card interface support</li> </ul> <p><b><u>Security</u></b></p> <ul style="list-style-type: none"> <li>• WEP, WPA/WPA2 PSK/Enterprise</li> <li>• Hardware accelerated encryption: AES / SHA2 / Elliptical Curve Cryptography / RSA-4096</li> </ul> <p><b><u>Performance</u></b></p> <ul style="list-style-type: none"> <li>• Supports sniffer, station, softAP and Wi-Fi direct modes</li> <li>• Max data rate of 150 Mbps@11n HT40, 72 Mbps@11n HT20, 54 Mbps@11g, and 11 Mbps@11b</li> <li>• Maximum transmit power of 19.5 dBm@11b, 16.5 dBm@11g, 15.5 dBm@11n</li> <li>• Minimum receiver sensitivity of -98 dBm</li> <li>• 135 Mbps UDP sustained throughput</li> <li>• 2.5 <math>\mu</math>A deep sleep current</li> </ul>			
14.	<p><b>System on Module, Evaluation and Starter Kit With I/O Carrier Card (complete evaluation kit with I/O Carrier card, with all connectors/accessories)</b></p> <p><b>Make: Xilinx Zynq OR Equivalent</b></p> <p><b>Must come with glass/acrylic protective cover with PCB standoffs</b></p> <ul style="list-style-type: none"> <li>• Device: XCZU3EG-SFVA625E</li> <li>• DDR4 SDRAM (2GB)</li> <li>• QSPI Flash (64MB)</li> <li>• eMMC Flash (8GB)</li> <li>• PL IO 180</li> <li>• PS IO 26</li> <li>• Quad-core ARM Cortex-A53 MPCore at 1.2 GHz</li> <li>• Dual-core ARM Cortex-R5 MPCore at 500 MHz</li> <li>• Mali™-400 MP2 at 600 MHz</li> <li>• Logic Cells: 154K</li> <li>• Flip Flops: 141K</li> <li>• DSP Slices: 360</li> <li>• BRAM: 7.6MB</li> </ul>	1		

	<ul style="list-style-type: none"> <li>• Clock Management Tiles: 3</li> <li>• 2-channel I2C switch/mux</li> <li>• 3 JX micro-header connectors (2 x 140-pin, 1 x 100-pin) providing the following connections to the Carrier Cards: 180 user PL I/O pins• 26 user PS MIO pins (one full MIO bank)</li> <li>• 4 PS GTR transceivers</li> <li>• 4 PS GTR reference clock inputs</li> <li>• PS JTAG interface</li> <li>• PL</li> <li>• 4-position boot mode DIP switch</li> <li>• DDR4 SDRAM (2GB, in x32 configuration)</li> <li>• Dual QSPI Flash (64MB)</li> <li>• Gigabit Ethernet PHY</li> <li>• I2C 8-bit I/O expander</li> <li>• I2C EEPROM (2Kb)</li> <li>• Linux BSP and reference designs</li> <li>• On-board voltage regulators</li> <li>• PS reference clock input</li> <li>• Power-On Reset (POR) circuit</li> <li>• USB 2.0 ULPI PHY</li> </ul>			
15.	<p><b>Entry Level System on Chip Development Board with standard accessories and following specifications:-</b></p> <p><b>Make: Xilinx Zynq/Equivalent</b></p> <p><b>Must come with all connectors/accessories</b></p> <ul style="list-style-type: none"> <li>• XC7Z007S SoC</li> <li>• Micron 512 MB DDR3L</li> <li>• Micron 128 Mb QSPI flash</li> <li>• Micron 8GB eMMC mass storage</li> <li>• On-board USB to JTAG and debug UART circuit</li> <li>• Murata "Type 1DX" wireless module with 802.11b/g/n Wi-Fi and Bluetooth 4.1 plus EDR and BLE (Bluetooth Low Energy)</li> <li>• USB 2.0 host interface with Microchip PHY</li> <li>• Dialog Semiconductor DA9062 PMIC (Power Management IC)</li> <li>• Arduino-compatible shield interface</li> <li>• 2 x Pmod-compatible interfaces</li> <li>• ST Micro LIS2DS12 Accelerometer and Temperature sensor</li> <li>• ST Micro MP34DT05 digital MEMS microphone</li> <li>• Reset button, user button, user switch, 2 x user bi-element LEDs</li> </ul>	2		
16.	<p><b>Lidar with standard accessories and following specifications:-</b></p> <p><b>Make: Slamtec OR Equivalent</b></p> <p><b>Must come with all associated connectors with standard</b></p>	2		

	<p><b>accessories and following specifications:-</b></p> <ul style="list-style-type: none"> <li>• Angular Range: 0-360 Degrees</li> <li>• 2D Laser Scanning</li> <li>• Range: 0.15-12m</li> <li>• Sample Rate: 8000 Hz</li> <li>• Angular Resolution <math>\leq 1</math> Degree</li> <li>• Measurement Resolution <math>\leq 0.5</math>mm</li> </ul>			
17.	<p><b>Function Generator with standard accessories and following specifications:-</b></p> <p><b>Make: Uni-T OR Equivalent</b></p> <p><b><u>Specifications</u></b></p> <p>Max frequency                    120MHz  Channels                            2  Sampling rate                    320MS/s  Waveforms                        Sine, square, ramp, pulse, noise, DC, arbitrary  Working modes                    Output on/off, continuous, modulation, sweep, burst  Modulations                        AM, FM, PM, ASK, FSK, PSK, PWM, BPSK, QPSK, OSK, DSB-AM, SUM, QAM</p> <p><b><u>Arbitrary Waveform</u></b></p> <p>Length                              8pts~16Mpts  Vertical resolution                16 bits (symbol included)</p> <p><b><u>Frequency Characteristics</u></b></p> <p>Sine                                 1<math>\mu</math>Hz~60MHz  Square                               1<math>\mu</math>Hz~25MHz  Pulse                                1<math>\mu</math>Hz~20MHz  Ramp                                 1<math>\mu</math>Hz~3MHz  Harmonic                         1<math>\mu</math>Hz~30MHz  Arbitrary                            1<math>\mu</math>Hz~15MHz  Noise                                60MHz (-3dB)  Resolution                         1<math>\mu</math>Hz  Accuracy                            <math>\pm 0.5</math>ppm 25°C,  First year aging rate: 1ppm  Temperature                        coefficient:  <math>\pm 0.5</math>ppm/°C  Temperature Coefficient        &lt; 2ppm/°C  Interfaces                         USB Host, USB Device, 10MHz clock source input/output</p> <p><b><u>General Characteristics</u></b></p> <p>Power                                100V~240V ACrms, 50Hz/60Hz  Display                              4.3-inch TFT LCD, WVGA (480 x 272)  Product color                      White and grey  Product net weight                3.2kg</p>	1		



	Product size Standard accessories	265mm x 110mm x 320mm BNC-BNC cable, BNC cable with alligator clips, power cord, USB interface cable			
18.	<b>Oscilloscope with standard accessories and following specifications:-</b>  <b>Make: Uni-T OR Equivalent</b>  Bandwidth 100 MHz Channels 4 Sample Rate 1GS/s Max. Memory Depth 28Mpts Waveform Capture Rate 50,000wfms/s Time Base Scale 2 ns/div 50 s/div Input Coupling (1MΩ± 1%) (13 pF± 3 pF) Vertical Scale 1mV/div 20 V/div (1 MΩ) DC Gain Accuracy ±3% Waveform Record 65,000 Frames Trigger Edge, Alternate, Runt, Super, picture, Nth Edge, Delay, Duration, Setup Hold, Pulse Width, Slope, Video, Pattern, RS232/UART, I2C, SPI, USB  Bus Decode Standard: Parallel; Waveform Operation A+B, A-B, A×B, A/B, FFT, Editable Advanced  Auto Measurement Peak-Peak Value, Amplitude, Maximum, Minimum, Top Value, Bottom Value, Mean, Average, Root Mean Square Value, Overshoot, Pre-shoot, Frequency, Cycle, Rise Time, Fall Time, Positive Pulse, Negative Pulse, Positive Duty Ratio, Negative Duty Ratio, Delay 1->2, and Delay 2->1.  Number of Measurements Display 5 measurements at the same time Measurement Statistic Average, Max, Min, Standard Deviation, Number of Measurements Frequency Counter Hardware 6 bits counter (Channels to be selectable) Standard Interface USB-Host, USB-Device, LAN,10MHz Input/ Output, AUX Output (Trig Out, Pass/Fail)  <b>General Characteristic</b> Power 100V~240VACrms, 45Hz~440Hz Display 8 inches, TFT LCD, WVGA		1		

	<p>(800×480)  Product Color White and Gray  Standard Accessories Probe×2/4(1×,10× switchable),Power Cord, USB Cable, PC Software CD</p>			
19.	<p><b>Soldering and SMD Rework Station with standard accessories and following specifications:-</b></p> <p><b>Make: Kada OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• Power Voltage: 220V AC or 110V</li> <li>• Power Consumption: 270W (Max.)</li> <li>• Pump: Diaphragm Pump</li> <li>• Capacity: 24L/min (Max.)</li> <li>• Leakage Voltage of Iron Tip: &lt;0.5mV</li> <li>• Standard Iron Tip: AT-900M</li> <li>• Hot Air Temperature: 100 to 480C</li> <li>• Tip of Iron Temperature: 200 to 480C</li> <li>• Outer Dimensions: 187(W)×150(H)×245(D)mm</li> </ul> <p><b>Must Include:</b></p> <ul style="list-style-type: none"> <li>• Rework Station with Air Output</li> <li>• Hot Air Wand Type A (Pump)</li> <li>• Soldering Iron holder</li> <li>• Soldering Iron</li> <li>• Soldering Iron Foam</li> <li>• Includes 3 Single Nozzles</li> </ul>	1		
20.	<p><b>Solder flux paste with following detail</b></p> <p><b>Make: Proskit OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• Net Weight = 50g</li> </ul>	5		
21.	<p><b>Solder wire with following detail</b></p> <p><b>Make: Proskit OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• 200 gm</li> <li>• 60/40</li> </ul>	5		
22.	<p><b>Wire Sponge for Solder Iron Tip with following detail:</b></p> <p><b>Make: Any Reputed Brand</b></p> <ul style="list-style-type: none"> <li>• General</li> <li>• Brass/Steel</li> </ul>	5		
23.	<p><b>De-soldering Vacuum Pump/Solder Sucker with following details:</b></p> <p><b>Make: Proskit OR Equivalent</b></p>	2		

	<ul style="list-style-type: none"> <li>• General</li> </ul>			
24.	<p><b>Solder Remover Wire Strip with following details:</b></p> <p><b>Make: Proskit OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• General</li> <li>• 2 ft spool</li> </ul>	5		
25.	<p>Programmable DC Power Supply with standard accessories and following specifications:-</p> <p><b>Make: Uni-T OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• 2-channel</li> <li>• 4-bit Voltage/Current Display</li> <li>• Output voltage: 0~30V (CH1/CH2)</li> <li>• Output current: 0~5A (CH1/CH2)</li> <li>• Output power: 315W</li> <li>• Load regulation voltage: &lt;0.01%+5mV</li> <li>• Load regulation Current: &lt;0.1%+10mA</li> <li>• Line regulation voltage: &lt;0.01%+3mV</li> <li>• Line regulation current: &lt;0.1%+3mA</li> <li>• Resolution voltage: 10mV</li> <li>• Resolution current: 1mA</li> <li>• Accuracy (25°C±5°C) voltage: &lt;0.5%+20mV</li> <li>• Accuracy (25°C±5°C) current: &lt;0.5%+10mA</li> <li>• Ripple (20Hz~20MHz) voltage: ≤2mVrms</li> <li>• Ripple (20Hz~20MHz) current: ≤3mArms</li> <li>• Output temperature coefficient voltage: ≤150ppm</li> <li>• Output temperature coefficient current: ≤150ppm</li> <li>• Voltage rise delay: ≤100ms (10% rated load)</li> <li>• Parallel/Series load regulation: ≤0.1%+0.1V</li> <li>• Output temperature coefficient voltage:</li> <li>• CH3 output features voltage: 5V</li> <li>• CH3 output features current: 3A</li> <li>• CH3 output features voltage accuracy: ±50mV</li> <li>• CH3 output features load regulation: ±50mV</li> <li>• Interfaces: USB Device, RS-232</li> <li>• Power: AC 100V/120V/220V/230V±10%, 50Hz/60Hz</li> <li>• Display: 4 windows, LED</li> </ul>	1		
26.	<p><b>Header Pins with following details:</b></p> <p><b>Make: Any</b></p> <ul style="list-style-type: none"> <li>• 40 pin Male Header</li> <li>• 40 pin Female Header</li> </ul>	5 sets each	Total 10 sets	
27.	<p><b>Jumper Wires with following details:</b></p> <p><b>Make: Any</b></p> <ul style="list-style-type: none"> <li>• 40 pin Male to Male</li> </ul>	5 sets each	Total 15	

	<ul style="list-style-type: none"> <li>• 40 pin Male to Female</li> <li>• 40 pin Female to Female</li> </ul>	sets		
28.	<p><b>Tactile Push Buttons with following details:</b></p> <p><b>Make: Any</b></p> <ul style="list-style-type: none"> <li>• DIP package</li> </ul>	20		
29.	<p><b>Display LEDS with following details:</b></p> <p><b>Make: Any</b></p> <ul style="list-style-type: none"> <li>• 5" LCD Display</li> <li>• Touch Screen</li> <li>• HDMI</li> <li>• Compatible with Serial# 2,3,4</li> <li>• Must come with connector</li> </ul>	5		
30.	<p><b>External Portable Hard-drives (1TB)</b></p> <p><b>Make: Transcend OR Equivalent</b></p>	2		
31.	<p><b>UPS for AI workstation (with installation and cabling) with following details:</b></p> <p><b>Make: Homage/Inverex OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• 1.8KW</li> <li>• Solar supported</li> </ul>	1		
32.	<p><b>Batteries, for UPS with following details:</b></p> <p><b>Make: Daewoo OR Equivalent</b></p> <ul style="list-style-type: none"> <li>• Low Maintenance, Deep Cycle Technology</li> <li>• 145Ah</li> </ul>	2		
33.	<p><b>Oxygen Sensor for Emission Analyzer with following details:-</b></p> <p><b>Make: ATS OR Equivalent</b></p> <p><b>Part No. EMS1090</b> <b>(Part For 5 Gas Emission Analyzer)</b></p>	2		
34.	<p><b>NOx Sensor with following details:-</b></p> <p><b>Make: ATS OR Equivalent</b></p> <p><b>Part No. EMS1100</b> <b>(Part For 5 Gas Emission Analyzer)</b></p>	2		

35.	<p><b>Complete Filter Assembly with standard accessories and following details:</b></p> <p><b>Make: ATS/Equivalent</b></p> <p><b>Part for 5 Gas Emission Analyzer, must include following parts:</b></p> <ul style="list-style-type: none"> <li>• Water separator screen (part no EMS1023)</li> <li>• Filter Aspirator/Venture Valve (part no. EMS1190)</li> <li>• Particle Filter Element (part no. EMS1010)</li> <li>• Screen and bowl cover for filter elements</li> </ul>	2		
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**NATIONAL INSTITUTE OF ELECTRONICS**  
**Ministry of Science & Technology**  
**Government of Pakistan**  
**17, H-9, Islamabad**



**Tel: 051-9265009-13 (Ext: 217)**

**Fax: 051-9265027**

**TENDER NO. 05/2020-21/NIE**

**MISC. EQUIPMENT, PARTS, TOOLS AND ACCESSORIES FOR AUTOMOTIVE LAB**

**TERM & CONDITIONS:**

1. Price to be quoted in Pak Rupees on (FOR) free home delivery basis.
2. As the equipment/ items to be procured are based on high tech technology therefore for competitive bidding single stage-two envelopes bidding procedure shall be adopted.
  - (i). the bid shall be comprised a single package containing two separate envelopes, containing separately **“TECHNICAL PROPOSAL”** and **“FINANCIAL PROPOSAL”**.
  - (ii). the envelope shall be marked as **“TECHNICAL PROPOSAL”** and **“FINANCIAL PROPOSAL”** in the bold, properly sealed and with legible letters to avoid any confusion.
  - (iii). initially the envelope marked with **“TECHNICAL PROPOSAL”** shall be opened.
  - (iv). the envelope marked with **“FINANCIAL PROPOSAL”** shall be retained in the custody of NIE without being opened.
  - (v). upon evaluation of technical proposals, NIE shall publically open the financial proposal of the technically accepted bids only. The financial proposal of the bids found technically rejected shall be returned un-opened to the respective firms.
3. The bids of the firm operating from their residential address and P.O. Box number will not be considered.
4. Tender number must be specified on the left corner of the bidding envelope.
5. The rates should be valid for at least **“90”** days from the date of tender opening.
6. The offered equipment/ items must be brand new of the original manufacturer and covered under normal warranty/guarantee with necessary back-up support.
7. The bid must be supported with necessary catalogue/ brochure indicating make, model detailed specification and country of origin of the offered equipment.
8. The scope of supplies includes supply of equipment, installation, testing and commissioning of equipment and if necessary training to NIE Personnel's.
9. The financial bid should reflect at sight the following costs separately for fair comparison purpose.
  - i. Unit Price of equipment.
  - ii. GST, if applicable.
10. Conditional/ ambiguous bids will not be entertained.
11. Earnest money @ 2% of quoted prices (Refundable) must be accompanied with tender in shape of a crossed bank draft/ pay order in favour of the Director General NIE.

12. E/M of the successful bidder will be refunded upon submission of prescribe performance/ bank guarantee to NIE and the same shall be released after satisfactory completion of warranty/ guarantee period of the supplied goods.
13. The successful bidder shall provide 5% performance/ bank Guarantee of the total order value of the order to NIE for satisfactory execution of the supply order.
14. The bid found to be lowest evaluated bid shall be accepted only either overall whole tender/items base or each item wise.
15. The estimated delivery/ completion period of supplies/ work must be specified in the quotation.
16. In case of any delay in supplies of ordered items, the successful bidder shall bound to inform NIE to prior to "15" days of the ending of last date of delivery, so that necessary approval regarding extension in delivery period may be obtained from Director General NIE otherwise at the time of payment to firm a penalty @ 2% per month of the total order value will be charged from the successful bidder without any notice.
17. Tender of all items may be awarded either to a single party or can be divided among different parties depending upon their professional capabilities and competitiveness in prices individually.
18. **No advance payment will be made.**
19. NTN and GST number must be mentioned on the quotation along with providing copy of its documentary evidence, failing which bid will not be considered.
20. Payment will be made on submission of the prescribed bill in duplicate through crossed cheque OR through Inland L/C after satisfactory completion of supply order and our acceptance thereof, which includes installation, testing, commissioning of the equipment and training etc. The bill presented on the letterhead of the firm will not be accepted for payment purpose.
21. As per Government Policy payment to the firm is subject to the registration of firm name in **Active Tax Payer List of FBR**, otherwise payment will be stopped till the appearance of vendor name in ATL of FBR.
22. Income Tax/ Sales Tax etc. will be deducted from bill as per Govt. Rules.
23. Last date for receipt of the tender in the Procurement Section of NIE is **February 04, 2021 up to 11:00 hours**. Technical proposals of the received firms shall be opened on the same day at **11:30 hours** in the presence of those who wish to be present. Tenders received late will not be considered in any case.
24. The Director General NIE reserves the right to accept or reject any or all tenders in part or whole, or change the quantity of tendered items as per provision of PPRA Rules.

**Muhammad Umair Habib**  
**Dy. Director Procurement**  
**NIE, Islamabad**  
**Ph: 051-9265009 (Ext: 217)**