

GOVT. COLLEGE OF ENGINEERING AND RESEARCH, AWASARI

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No. GCOEARA/Store/2017-18/3726

Date: 17/10/2017

To,

As per addresses overleaf

Subject : **Quotation for supply of E-yantra Lab Equipments**

Please send your quotation for the following items on the terms and conditions listed below, mentioning our reference letter number, date and due date of quotation on your sealed envelop, on or before **31.10.2017** at 5.00 pm.

Sr.No.	Specification	Qty.	Unit
1	Fire Bird V ATMEGA2560	4	NA
	Microcontroller: Atmel ATMEGA2560 as Master microcontroller, Atmel ATMEGA8 as Slave microcontroller Sensors: Three white line sensors (extendable to 7) Five Sharp GP2D12 IR range sensor (80cm) (One in default configuration) (Also supports GP2D120 (30cm) and GP2Y0A02 (150cm)Eight analog IR proximity sensors (20cm), Eight analog directional light intensity sensors,Two position encoders (extendable to four) Battery voltage sensing, Current Sensing (Optional), Servo mounted sensor pod (optional), Wireless colour camera (optional), Ultrasound scanner (optional), Gyroscope and Accelerometer (optional), Magnetometer (optional) GPS receiver (optional) Indicators: 2 x 16 Characters LCD, Indicator LEDs Buzzer Control: Autonomous Control, PC as "Master" and Robot as "Slave" in wired or wireless mode, Distributed (multi robot) communication Communication: Wireless ZigBee Communication (2.4GHZ) (Optional), USB Communication, Wired RS232 (serial) communication, Simplex infrared communication (From infrared remote to robot), Dimensions: Diameter: 16cm, Height: 10cm, Weight: 1300gms Power: 9.6V, 2100mAh Nickel Metal Hydride (NiMH) battery pack and external Auxilliary power using battery charger. Battery Life: 2 Hours when motors are operational 75% of the time, Locomotion,Two DC geared motors in differential drive configuration and caster wheel at front as support Top Speed: 24 cm / second, Wheel Diameter: 51mm Position encoder: 30 pulses per revolution Position encoder resolution: 5.44 mm		

2	<p>Spark V Robot</p> <p>Specifications Microcontroller: ATMEL ATMEGA16A Programming: Using Bootloader Utility from NEX Robotics via USB port (no need of separate programmer) Sensors: Three white line sensors, Three IR proximity sensors, Three directional light intensity sensors, 2 Position encoders with 12.97mm resolution, MaxBotix EZ series ultrasonic range sensors (optional), Servo mounted Ultrasonic Range Sensor (optional) Battery voltage sensing, TSOP1738 IR receiver for TV remote control Indicators: 2 x 16 Characters LCD, Indicator LEDs, Buzzer, Battery low indication Locomotion: Two DC geared motors and caster wheel as support Top Speed: 15 to 20cm / second depending on the motor type. Operational Modes: Standalone (Autonomous Control) PC as master and robot as slave, Distributed (multi robot communication) Communication: USB: XBee wireless module (ZigBee(IEEE 802.15.4) Robots to Robots and Robots to PCs (Optional), Wired RS232 (serial) communication at TTL level. Simplex infrared communication (From infrared remote to robot) (support code not included) Power: 7.2 V 600 mA rechargeable NiMH battery, Onboard Smart Battery Controller charges the battery in intelligent way and also monitors the battery charge level when robot is in operation. Dimensions: Diameter: 15cm Height: 7cm Kit contains</p> <ul style="list-style-type: none"> • Spark V Robot with all the sensors mentioned in specifications • Documentation CD 	5	NA
3	<p>Firebird V P89V51RD2 Adapter card</p> <p>Specifications: Microcontroller: P89V51RD2 working at 11.0592MHz Sensor support: One Sharp IR range sensor (GP2D30, GP2D12 and GP2Y0A02YK) Two analog IR proximity sensors two directional light intensity sensors Three white line sensors Battery voltage sensing Locomotion: Two DC motors with PWM based velocity control and position encoder Indicators: Two position encoders LCD display in 4 bit mode Motion status indication Communication: Onboard RS232 communication Wireless ZigBee communication IR remote control based on RC5 communication standard (Code support not provided) Robot configurations supported: Basic configuration Tank</p>	3	NA
4	<p>Firebird V LPC 2148 Adapter card</p> <p>Specifications: Microcontroller: LPC2148 (ARM7 TDMI core) (Master) (working at 60 MHz) Two ATMEGA8 (slave) Sensor support: Five Sharp IR range sensors (GP2D30, GP2D12 and GP2Y0A02YK) Eight Analog IR proximity sensors Eight directional light intensity sensors Three white line sensors (expandable up to seven white line sensors) Battery voltage sensing Battery current sensing Locomotion: Four DC motors with PWM based velocity control and position encoder for 3 DC motors Indicators: Three position encoders LCD display in 4 bit mode Motion status indication Expansion slot: SPI, I2C, UART, 18 servo motor control pins, Communication: Onboard RS232 communication True USB 2.0 communication Wireless ZigBee communication IR remote control based on RC5 communication standard Robot configurations supported: Basic configuration Omni directional robot Insect Tank</p>	5	NA

5	Zig-Bee wireless module for robot Specifications: DATA RATE : RF 250 Kbps, Serial up to 1 Mbps INDOOR/URBAN RANGE : 200 ft (60 m) OUTDOOR/RF LINE-OF-SIGHT RANGE :4000 ft (1200 m) TRANSMIT POWER : 3.1 mW (+5 dBm) / 6.3 mW (+8 dBm)boost mode RECEIVER SENSITIVITY (1% PER) : -100 dBm / -102 dBm boost mode SERIAL DATA INTERFACE : UART, SPI CONFIGURATION METHOD : API or AT commands, local or over-the-air (OTA) FREQUENCY BAND : ISM 2.4 GHz INTERFERENCE IMMUNITY : DSSS (Direct Sequence Spread Spectrum) ADC INPUTS : 10-bit ADC inputs DIGITAL I/O : 15 ANTENNA Integrated Wire SMT: RF Pad OPERATING TEMPERATURE : -40° C to +85° C PROTOCOL : ZigBee PRO 2007, HA-Ready with support for binding/multicasting ENCRYPTION : 128-bit AES RELIABLE PACKET DELIVERY : Retries/Acknowledgements IDS : PAN ID and addresses, cluster IDs and endpoints (optional) CHANNELS : 16 channels	10	NA
6	Zig-Bee wireless module Adapter Model code: XBP24-AWI-001; Operating Frequency: ISM 2.4 GHz Antenna type: Wire antenna; Indoor/Urban Range up to 300 ft. (90 m); Outdoor RF line-of-sight Range up to 1600meters Interface: Serial(UART) at 1200-115200 bps; Supply Voltage: 2.8 – 3.4 V; Transmit Current (typical) 215mA (@ 3.3 V); Idle / Receive Current (typical) 55mA (@ 3.3 V); Dimensions: 0.960 in x 1.297 in (2.438 cm x 3.294 cm); Operating Temperature: -40 to 85° C (industrial)	5	NA
7	Metal-gear Servo Motor Dimension: 40.7mm x 20.5mm x39.5mm • Torque: 15.5kg/cm at 4.8V, 17kg/cm at 6V • Dual bearing with metal gear • Motor weight: 60gms • Operating speed: 0.15sec/60 degree • Operating voltage: 4.8V to 6V • Temperature range: 0-55C • 0.6 ms for 0 degree Rotation • 2.2 ms for 180 degree Rotation	10	
8	Servo Motor Based Gripper Specifications Servo Motor Based Gripper Gripper arm is used to pick and place an object. It can be fitted in front of Fire Bird V tank robot and Fire Bird V 4-Wheel Drive robot. Gripper arm contains two servo motors. One dual bearing, 6.8Kg/cm NRS 785 servo motor is used for moving arm up and down and a Futaba 3003 servo motor is used for gripping and un-gripping action. Multiple robots equipped with such a gripper can form a chain of robots which can be very helpful in certain algorithms.	2	NA

9	Sharp IR range finder sensor	10	NA
	<p>Specifications:</p> <p>GP2D120 (GP2Y0A41SK0F): Distance measuring range: 4 to 30cm Analog output type Refresh rate: 36ms Supply voltage: 4.5 to 5.5 V Average current consumption: 33 mA Package size: 29.5×13×21.6mm GP2D12 (GP2Y0A21YK0F): Distance measuring range: 10 to 80cm Analog output type Refresh rate: 36ms Supply voltage: 4.5 to 5.5 V Average current consumption: 33 mA Package size: 29.5×13×21.6mm GP2Y0A02YK (GP2Y0A02YK0F): Distance measuring range: 20 to 150cm Analog output type Refresh rate: 36ms Supply voltage: 4.5 to 5.5 V Average current consumption: 33 mA Package size: 29.5×13×21.6mm GP2Y0A710K0F (GP2Y0A710K0F): Distance measuring range: 100 to 550cm Output type: Analog Refresh rate: 36ms Supply voltage: 4.5 to 5.5 V Average current consumption: 30 mA Package size: 60mm ×37mm ×20mm</p>		

Terms & Conditions

- 1 Taxes – Inclusive / if extra clearly mention the percentage.
 - 2 Delivery period –
 - 3 Payment Terms –
 - 4 Quotation Validity –
 - 5 Warranty -
 - 6 Guaranty-
- } Mention clearly
- 7 Delivery Charges – Free / if extra mention clearly.
 - 8 The part supply and its bill will strictly not be entertained.
 - 9 If you fail to supply the stores within the specified period, the order will be treated at cancelled without any information.
 - 10 The material will be accepted subject at approval(after inspection of the material),if rejected it will be returned to you at your cost.
 - 11 The material to be supplied should be strictly according to the specification only.
 - 12 Octroi is not applicable since Institute is located in Gram Panchayat area.
 - 13 Please attach copy of your shop registration certificate alongwith your quotation, without which your quotation will not be accepted.



(Dr. A.S. Pant)

Principal

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- 4 HOD- Computer Engineering for display on College Website
- 5 Notice Board- for display