INDIRA GANDHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF PRODUCTION ENGINEERING
SARANG-759146, DIST: Dhenkanal, Odisha

Ref. No. IGIT/Prod/106
Date: 28/02/2018

Call for Quotation

Dear Sir,

Sealed quotations in company letter head are invited from reputed agencies for the items mentioned below on or before **07.03.2018**. Quotation number and date should be superscribed on the sealed envelope and sent by Registered post / speed post/ postal services to **HOD, Production Engg., INDIRA GANDHI INSTITUTE OF TECHNOLOGY, SARANG-759146, DIST: DHENKANAL, ODISHA, INDIA.**

Quotation received after the due date, or without seal shall not be considered. The materials / setup will have to be delivered within 30 days from the date of placing order unless otherwise directed failing which the purchase order is liable to be cancelled.

Photocopy of valid authorization certificate, PAN/TIN card and GST registration are also required to be enclosed. The terms of delivery along with any extra charges e.g. GST etc. & mode of payment should be indicated clearly in the quotation. Payment shall be made after successful installation. The material will be delivered to IGIT Sarang on FOR basis. The bidder should submit the manuals with the quotation.

Quotation opening time: 08.03.2018 (9 AM)

Yours faithfully,

H.O.D. , PRODUCTION ENGG.

C.C to :-

1. PA to Director for kind information to Director.
2. Professor I/C Website for uploading the quotation in IGIT web.

CONDITIONS

i) In case, after Pre-bid meeting (wherever applicable) any modification(s) / addition(s) / deletion(s) or any alternation in the requirement(s) / specification(s) etc. is required, the same will be placed on the IGIT website-www.igitsarang.ac.in, therefore, all the bidders are advised to visit our website before filling / submitted their Quotations.

ii) The offered rates will be valid initially for a period of one year. The Institute can place repeat order on same terms & conditions within this period.

iii) Acceptance of Quotation will be intimated to the successful Quotation through a Letter of Intent (LOI) duly signed by the authorized signatory of the institution.

v) This Quotation is valid up to 180 days from the issue of quotation notification.

vi) The supplier will provide one year on site guarantee, and under guarantee period all the damages items shall be repaired / replaced by the supplier at their cost and risk.

vii) IGIT's officials can visit the work place of successful bidder and can review the progress of work and can instruct regarding quality aspect.

ix) The rates quoted by the bidder shall be complete for supply and installing of the finished items as per the specification(s) and shall be inclusive of all applicable tax, duty(ies) loading, unloading, packing, transportation to IGIT, sarang installation etc. and nothing extra / additional shall be payable on these rates.

xi) Conditional Quotation will not be accepted.

xii) Successful bidder will be required to submit schedule of activities to complete the work order (day wise/Date wise) with technical bid document.

xiii) The supplier has to ensure the rectification of defects within three days of the complaint during the period of guarantee.

xiv) AMC charges will be mentioned in the Quotation.

xv) The Quotationer is required to submit one year on site Guaranty i.e. to replace, the damaged equipments during the guarantee period or repair.

xvi) The authority reserves the right to accept or cancel any or all Quotations without assigning any reason there-of.

xviii) All items should Certify IS0 standard or any other recommended standard.

Robot and accessories				
Sr No.	**Equipment**	**Specification**	**Quantity**	**Quoted rate (inclusive all taxes)**
1	**FireBird V 2560**	**I. Microcontroller:** • ATMEL ATMEGA2560, • P89V51RD2, • LPC2148 (ARM7) **II. Sensors:** • Three white line sensors (extendible to seven white line sensors) • Five GP2D12, 80cm IR range sensors covering front half part of the robot, • Eight analog IR proximity sensors covering robot from all sides, • Eight analog directional light intensity sensors, • Two position encoders, Battery voltage sensing. **III. Indicators:** • 16 x 2 Characters LCD • Indicator LEDs • Buzzer • Battery low indication **IV. Operational Modes:** • Standalone (Autonomous Control) • PC as master and robot as slave • Distributed (multi robot communication) **V. Communication:** • USB Wired RS232 (serial) communication Simplex infrared communication (From infrared remote to robot) • ZigBee (IEEE 802.15.4) (Wireless) • Blue tooth (Wireless) • Wi-Fi (Wireless **VI. Dimensions:** • Diameter: 16 cm Height: 10 cm (including sharp sensor) • Weight: 1.26Kgs. **VII. Power:** 9.6 Volts, 2100mAH NiMH rechargeable battery pack with 1 hour of operation Auxiliary power supply for extended operation **III. Locomotion:** • Two DC geared motors and caster wheel at front as support • Top Speed: 24 cm / second • Wheel Diameter: 52mm • Position encoder: 30 pulses per revolutions • Position encoder resolution: 5.44mm	4	
2	**Spark V Robot**	**I. Microcontroller:** ATMEL ATMEGA16 **II. Sensors:** • Three white line sensors • Three IR proximity sensors • Three directional light intensity sensors • Two Position Encoders • MaxBotix EZ series ultrasonic range sensors • Servo mounted Ultrasonic Range Sensor • Battery voltage sensing **III. Indicators:** • 2 x 16 Characters LCD • Indicator LEDs • Buzzer • Battery low indication **IV. Locomotion:**	5	

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		• Two 75 RPM DC geared motors and caster wheel as support • Built-in clutch for protection of the motors from non-continuous wheel stalling. • Top Speed: 66cm/second **V. Operational Modes:** • Stand-alone (Autonomous Control) • PC as master and robot as slave **VI. Communication:** • USB Communication using FT232 USB to Serial Converter • Simplex infrared communication (From infrared remote to robot) • ZigBee (IEEE 802.15.4) (Wireless) (Robots to Robots and Robots to PCs) **VII. Dimensions:** • Diameter: 15cm • Height: 7cm **VIII. Power:** • 6 AAA size NiMH rechargeable batteries (Batteries not included) • On board Smart Battery Controller charges the battery in intelligent way and also monitors the battery charge level when robot is in operation. **IX. Locomotion:** • Two 75 RPM DC geared motors and caster wheel as support • Built-in clutch protection for the motors from non-continuous stalling of the wheel • Top Speed: 66cm/second X. **Accessories:** • Servo mounted Ultrasonic range sensor for 180 degree scan • Servo mounted directional light intensity sensor for 180 degree scan • Two position encoders • MaxBotix EZ series ultrasonic range sensors • XBee wireless module **XI. Software Support:** • GUI Based control, AVR studio, WINAVR • Microsoft robotics studio Visual Programming Language **XII. Requires:** • AC adaptor with exact 12VDC with 1Amp. current rating for battery charging. • 6 NiMH rechargeable batteries		
3	**Fire Bird V P89V51RD2 adapter card**	I. **Microcontroller:** P89V51RD2 working at 11.0592MHz II. **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 III. **Locomotion:** Two DC motors with PWM based velocity control and position encoder IV. **Indicators:** Two position encoders LCD display in 4 bit mode Motion status indication V. **Communication:** Onboard RS232 communication Wireless ZigBee communication Robot configurations supported: Basic configuration Tank	3	
4	**Fire Bird V LPC2148 adapter card**	I. **Microcontroller:** LPC2148 (ARM7 TDMI core) (Master) (working at 60 MHz)Two ATMEGA8 (slave) II. **Sensor support:** Five Sharp IR range sensors (GP2D30, GP2D12 and GP2Y0A02YK)Eight Analog IR proximity sensor Eight directional light intensity sensors Three white line sensors (expandable up to seven white line sensors)Battery voltage sensing Battery current sensing III. **Locomotion:** Four DC motors with PWM based velocity control	5	

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		and position encoder for 3 DC motors IV. **Indicators:** Three position encoders LCD display in 4 bit mode Motion status indication V. **Expansion slot:** SPI, I2C, UART, 18 servo motor control pins VI. **Communication:** Onboard RS232 communication 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		
5	**Zigbee Modules 100m range**	• **Model code:** XB24-Z7WIT-004 • **Operating Frequency:** ISM 2.4 GHz • **Antenna type:** Wire antenna • Indoor/Urban Range up to 133 ft. (40 m) • Outdoor RF line-of-sight Range up to 400 ft. (120 m) • Interface: Serial(UART) at 1200 - 1 Mbps • Supply Voltage: 2.1 – 3.6 V • Transmit Current 40mA (@ 3.3 V boost mode enabled) • Receive Current 40mA (@ 3.3 V boost mode enabled) • Dimensions: 0.960" x 1.087" (2.438cm x 2.761cm) • Operating Temperature: -40 to 85° C (industrial)	10	
6	**Zigbee Modules Adapter**	• USB 2.0 compatible (No legacy RS232 required) • USB powered • RXD, TXD, RSSI, ASSOSIATE indicator LEDs • Supports AT and API commands • Achievable data rates: 2400-115200 bps • Data output: CMOS(2.8-3.4V) UART interface • Supported ZigBee wireless module	5	
7	**Metal-gear Servo Motors**	• 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 PWM pulse for 0 degree Rotation • 2.2 ms PWM pulse for 180 degree Rotation	10	
8	**Servo Motor Based Gripper kit for the Fire Bird V robot**	• Gripping size: 30mm • Gripping force: 250gms (Maximum) • Gripping jaw length: 30mm • Gripping jaw width: 19mm • Weight: 250gms approx (Including 2 servo motors for gripping and up/down motion) • Up/Down motion span 1800	2	
9	**Sharp GP2Y0A21Y K0F infrared range sensor (10cm to 80cm)**	• 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 •	10	

(The agency will provide 3 days training at Dept. of Production Engg., IGIT sarang.)

Accepted by me:

25/2/18

Signature
Prop./ Manager
Tel. No.
Mob. No.