

CORRIGENDUM-1

Technical Specifications	Bid should be submitted as per below mentioned Revised Technical Specifications
Last date of submission of E-Tender	13.02.2019 (Wednesday) on or before 03.30 p.m
Opening of Techno-Commercial Bid	13.02.2019 (Wednesday) at 04.00 p.m

Revised Technical Specification of GC-MS

TENDER NO. RGIPT/Jais/E-Tender-CRF-SS/2018-19/06

PART -A

Technical Specification for Single Quadrupole Mass Spectrometer (GCMS)

Mass Spectrometry

Mode

- Electron Impact Ionization (EI), with full scan (FS), SIM, and FS/SIM simultaneous within sample injection

Ion Source

- It should have wire free EI source. Programmable to 350 °C or more
- It should have Integrated dual filament assembly with improved filament lifetime
- The Transferline temperature should be programmable up to 350 °C or more

Quadrupole Mass Analyzer

- Mass Range: 1.6 –1050 u or better
- Resolution: Unit mass resolution
- Dual-stage mass filter with off-axis ion guide pre-filter for noise reduction and solid, homogeneous non-coated unheated or heated quadrupole rods

Detectors: FID along with GC-MS.

Detection System

- It should utilize new generation discrete dynode electron multiplier
- Electrical dynamic range > 10⁶ or better

Vacuum System

- One split flow Turbomolecular pump of capacity 250 litres/sec or better for creating high vacuum with high sensitivity of 5 femtogram.

Performance Specifications

- Instrument Detection Limit ≤ 5 fg

Gas Chromatography

Oven

- The column oven should have an Operating temperature range: ambient +4 °C to 450 °C or better.
- Cool-down time from 450°C to 50°C should be less than 4 minutes
- It should have number of ramps/plateaus: 9/10 or more
- The maximum heating rate should be 120 °C/min or more
- Accuracy $\pm 1^{\circ}$ C

Pneumatic controls

Electronic pneumatic controls should be part of injector and detector modules. The electronics carrier gas controller should allow operating in constant and programmed flow and pressure modes.

Split/Splitless injector & Electronics Gas Controller – Qty 1

- Suitable for all capillary columns: 50 μ m to 530 μ m i.d.
- Maximum Temperature: 400 °C or more
- Split Ratio: up to 7500:1 or better
- Pressure Range: 0-140psi or more
- Backflush for Higher boiler components need to quoted

Programmable Temperature Vaporizer Injector (PTV) or Programmable on column Capillary injector with Backflush & Electronics Gas Controller – Qty 1

- Programmed Temperature Injector for Supports hot/cold, split and splitless modes and On Column (TPOC)
- Temperature programming of up to 3 ramps at up to 600 °C/min or more
- Maximum Temperature: 450°C or more
- Pressure range: 0–100 psi or more
- Backflush (Post Column) for Higher boiler components need to quoted

Flame Ionization Detector with Electronics Gas Controller – Qty 1

- Capillary column optimized compatible with 1/8" and 1/16" packed column
- Flameout detection and automatic re-ignition
- Minimum Detectable Level (MDL): <1.4 pg C/s or better
- Linear dynamic range: >10⁷ or better
- Maximum temperature: 450 °C or more

Auto Injector/Sampler

- Auto Injector or Sampler of 8 vial capacity or more of 2ml vial size Qty 500

GC Analytical Performance

- The GC should have a Retention Time Repeatability of <0.008min
- Typical peak area repeatability: <1.0 % RSD

Data System

- Complete computer control of parameters for GC and mass spectrometer
- Complete integration of gas chromatograph, and mass spectrometer methods and set-up procedures
- Fully automated data processing programs
- The software must operate with latest Windows 7 operating system or suitable for true 32/64 -bit multi-tasking that allows the simultaneous generation and printing of reports as an acquisition proceeds without interruption
- Real time data analysis
- Should be Quoted Chromatography Management Software
- Should be Quoted latest NIST- Library with original CD
- Suitable branded CPU (with original operating system), Monitor & printer should be supplied along with the instrument.

Column

- 5% phenyl dimethylpolysiloxane capillary column 30m length – Qty 1
- 100% phenyl dimethylpolysiloxane capillary column 60m length – Qty 1

Warranty

Five Years Warranty with spares & AMC of the equipment should be mandatory for 3 years is required with all items. Warranty period will start from the date of installation. Parts should be given with part no. and name.

Consumables

- Graphite/Vespel ferrule for 0.25ID Column Qty 10
- Graphite/Vespel ferrule for 0.32ID Column Qty 10
- Graphite Ferrule 0.1-0.32mm ID Column Pk10
- Injector Septa - Qty 50
- Capillary Column nut for S/SL & PTV Injector – each Qty 5
- 5ul Liquid Syringe – Qty 5
- Vacuum Pump Oil – 1ltrs
- Filament – Qty 2
- Liner sealing ring – each Qty 10
- Liner for PTV & S/SL Injector– each Qty 5

Accessories

- High Purity Helium Gas filled cylinder – Qty 1
- High Purity Hydrogen Gas filled cylinder – Qty 1
- High Purity Zero Air Gas filled cylinder – Qty 1
- Double Stage SS Diaphragm Regulator for Helium, Hydrogen, Zero Air each Qty1
- Online UPS with the capacity to run the integrated system and with Backup 1 Hour - 230 VAC, 50Hz, Single Phase I/P & O/P

On-Site Installation and Training: Free of Cost

IMPORTANT NOTE:

Offer should indicate all parts with details specification and Brand clearly as required in our specifications

PART-B

Technical Specification for Simdist Analyzer – Hydrocarbons upto C100

Fully automatic microprocessor based Gas Chromatography system with Auto Injector/Auto Sampler for Analysis of Hydrocarbons upto C100. The system should have automatic/Electronic gas control system and can be controlled from chromatography management software. User friendly operation to manage the work from LCD Screen and Keypad as when required. The system should have capability to install three or more numbers of Injectors and Detectors. Auto Diagnostics : Checks, corrects, operations and status of GC control, RAM, ROM, CPU Sensor, Keyboard and live Auto Diagnosis while Starting and while Running

Column Oven

Column Oven Size should be 10 ltrs or more

Operating Temperature range – Ambient +5 °C to 450 °C or better

Temperature Set Point Resolution: 1 °C

Number of Ramps/Plateaus: 7/8 or more

Maximum Heating Rate: 45 °C/min or more

Oven Cool-Down (22 °C ambient): 400 °C to 50 °C in < 6 min

The system should be upgradable with cryogenic system

Performance Specifications

Typical Retention Time Repeatability: 0.008 min or better

Typical Peak Area Repeatability: <2% RSD or better

Automatic / Electronic Pressure Control

Up to 10 channels or more of integrated electronic gas control

Pressure Set Points Minimum Increments: 0.01 psi in all ranges

Auto Injector /Auto Sampler

Minimum vial capacity 8µl or more with pre & post wash facility

Should be quoted 2ml vial – Qty 500

Carrier Gas Control for Capillary Column Injector

Pressure Range: 0–100 psi or more

Modes: Constant Pressure, Constant Flow and Programmed Pressure

Injector

Minimum Number of Injectors: 2 or more

Dedicated Programmed Temperature Vaporizer Programmable on column Capillary injector with Electronics gas controller– Qty 1

Suitable for all (0.1 mm to 0.53 mm i.d.) capillary columns

Temperature Range: 50 C - 450 deg C

Constant pressure & constant flow modes, Pressure programming with three ramps and four plateaus

Gas saver mode: Standard

Modes: Split, Splitless and Solvent Split

Temperature Programming Ramp: 1 deg C/min to 250 deg C/min

Detector

Can be installed for 2 or more number of Detectors

Flame Ionization Detector with Electronics gas controller – Qty 1

Compatible with different OD Packed columns, narrow & wide bore capillary columns

Flameout detection

MDL: <2 pg C for C9 hydrocarbon or better

Linear Dynamic Range: >10⁷ or better

Maximum Temperature: 450 deg C or more

Columns

Suitable Capillary column for Hydrocarbons analysis upto C100. (2no.s extra column for analyzing different liquids)

Software

- Suitable Chromatography Management Software compatible to run in latest windows operating system. Provision for export data in ASCII mode is preferable.
- Hydrocarbons analysis Simdist software for Hydrocarbons analysis (upto C100), specially for petroleum crude oil analysis need to be quoted with the system
- Suitable laser printer should be supplied alongwith the computer.

Consumables & Spares

All necessary consumables & spares like all Gases with regulators, Tubing, Nut & ferrule to install the equipment.

Spare Autosampler Syringe Qty 5

UHP grade Helium filled cylinder with double stage SS regulator – Qty 1

UHP grade Hydrogen filled cylinder with double stage SS regulator – Qty 1

UHP grade Zero Air filled cylinder with double stage SS regulator – Qty 1

Online UPS with required capacity to run the integrated system including computer, 230VAC, 50Hz Single Phase I/P & O/P, 1 hour backup – Qty 1

Startup/Installation Kit – Qty1

Gas purification panel for Helium, Hydrogen & Zero Air – Qty 1set each including Moisture trap

Calibration Standard

Simdist Calibration Standard upto C100- Qty 1

B. On-site Installation and training free.

Five Years onsite warranty with spares and AMC of the equipment should be mandatory for 3 years is required on all the items. Warranty period will start from the date of installation. .

Parts should be given with part no. and name.

The other terms & conditions of the E-Tender remains unchanged.

This issues with the approval of the Competent Authority.

Sd/-
Stores & Purchase Officer