

SPECIFICATIONS FOR GC – MS:

We intend to buy GC Quadrupole Mass Spectrometer with following technical specifications: Bid should be made in Two Bid Patterns i.e. Techno commercial and Price Bid in separate envelopes with clearly mention on the envelopes Technical and Commercial Bids. Both the envelopes should be placed in single envelop with clearly mentioning the Item Name and Address to Prof.M.M.Srivastava, Department of Chemistry, Dayal Bagh Education Institute, Agra-282110, U.P. Vendor to offer All required Pre requisites for complete working & Installation of GC-MS System with Branded PC-Printer (Dell /HP/IBM) Data Handling & Reporting S/W for full control of the system. Supplier to provide Details on Local items & Prerequisites.

Analyzer – MS Specification:

- 1. System should be compact** and offer **highest sensitivity with working mass range of 1100 Da or more**, with built in Full Scan, Selected Ion Monitoring (SIM) & Combination of both the modes.
GC-MS with Probe for Direct introduction of Solid/Liquid samples.
- 2. Ionization modes:**
Electronic Ionization i.e. EI and Optional Positive and Negative Chemical Ionization (CI).
- 3. Ion Source:**
Source temperature up to 300°C or more with quick change over for EI/CI mode and Auto aligned with dual Filament
- 4. Mass Analyzer / Filters:**
It should be based on Quadrupole with pre and post filters, high ion transmission efficiency and Pre filter with facility for active ion beam focusing eliminates neutral noise and offers best sensitivity.
- 5. Resolution:**
Better than 0.8 Da with mass axis stability of ± 0.1 Da and fast scan rate of 12000 Da/Sec or more. Resolution should be user adjustable with required selectable settings & minimum dwell time should be 1ms .
- 6. Turbo molecular pump:**
Turbo molecular pump should be dual stage air cooled with 350 liters / sec or higher capacity for fast vacuum & easy & quick change over from EI to CI and should allow the system to with stand higher carrier gas flow rate of 15ml/min or higher.
- 7. Electron Energy:**
10 to 120 Electron Volt (EV) users selectable or higher.
- 8. Detector :**
Electron Multiplier with good negative ion sensitivity and No detector calibration.
- 9. Optionally Libraries to be quoted with (NIST, Wiley), User Customizable library & automatically searching of Multiple Libraries.**

10. It should offer Auto tuning in all ionization modes & should remain tuned for longer time avoiding frequent tuning for better system performance.
11. Performance Specification with capillary injector should be as given below OR Better :

<i>Mode</i>	<i>Test</i>	<i>Specification[†]</i>
EI Full Scan	1 pg Octafluoronaphthalene (OFN) from m/z 50 to 300 for m/z 272	S/N ≥500:1
PCI Full Scan [‡]	120 pg Benzophenone (BZP) from m/z 80 to 230 for m/z 183 or better	S/N ≥500:1
NCI Full Scan [‡]	250 fg OFN from m/z 200 to 300 for m/z 272 Or better	S/N ≥1000:1

GAS CHROMATOGRAPH SPECIFICATIONS:

1. Temperature range: Ambient +4°C to 450°C and should be upgradable to -100°C with liquid N₂.
2. Temperature programmed ramps: 22 ramps
3. Cool down rate should be less than 5 minute for GC oven Temperature of 400 – 50Degree C.
4. GC should have built in 10 or more method storage.
5. System should be capable to install up to 3 multiple injectors and 3 multiple detectors of User Choice irrespective of detector type.
5. GC should have provision of EPC / EFC/PPC for all the pneumatic parameters with Pressure Range of 150 psi for use of wide variety of Capillary columns.
6. Probe for injecting Solid, liquid and slurries with Programme Temp and Split Ratio without contaminating the system.

Programmable Temperature Vaporizing Injector (PTV)

1. GC should be configured with PTV with Back flush option for Faster Analysis.
2. Temperature range: 100°C to 450°C with liquid N₂.
3. Temperature ramps: 22
4. Maximum Temperature range: 200°C / min.

Flame Ionization Detector (FID) (1 No.)

- 1. Flame tip must be made of ceramic only**
2. Maximum temperature: 450 °C
3. Detectivity: 2 pg C/sec or less.
4. Linear dynamic range: 10⁷

5. Flame-out detection & Auto re-ignition in FID is must for quality operation.

ECD Electron Capture Detector (1 No)

Maximum temperature: 450 °C

Detectivity: 7 fg/s Lindane

Linear dynamic range: 10⁴

Radioactive source: ⁶³Ni - 15 mCi (555 Mbq)

Maximum 3 detectors & 3 Injector can be installed simultaneously.

GC can accommodate both packed as well as capillary Columns if needed.

System should be quoted with PC, Printer, Hydrogen, Nitrogen, Helium and Zero Air Cylinders with Regulators & Gas Purification Panel.

Syringes of 5, 10 & 250 microlitre. 2 Capillary Column & 2 packed column should also be given with instrument.

Warranty should be one year with Extra One Year AMC.

Price Should be Quoted in Foreign Currency including Custom Clearance and Transportation up to Dayal Bagh Educational Institute, Agra.

NOTE: Duty Exemption Certificate will be provided by us with Purchase Order.

Last Date of Tender Submission is 3/1/2012 upto 2.30 PM.

Technical Bid Opening 4/1/2012 at 11.00 AM at Director, Office, DEI.