

SPECIFICATIONS

1) Gas Chromatograph system

General Features	<ul style="list-style-type: none"> ➤ Fully automated with programmable pneumatic control (digital control) for injector, detector and purge gas. ➤ Instrument should be compatible to computer and software should be Window 7 or latest. ➤ Basic system with EPC/AFC/PPC control for carrier/detector zone gases. ➤ EPC/ PPC/AFC should provide optimum performance with all types of columns and detectors ➤ All parameters should be stored as a part of method for better analysis reproducibility ➤ System must have touch screen user interface for easy instrument operation
Gas Flow control	<ul style="list-style-type: none"> ➤ Must come standard with programmable pneumatic control ➤ Digital Pneumatic Control for setting column flow with pressure, flow and linear velocity.
Inlet configuration and usability	<ul style="list-style-type: none"> ➤ Injectors should be controlled by EPC/PPC/AFC. ➤ Removable glass liner for trapping non-volatile residues. <p>Injector for capillary column</p> <ul style="list-style-type: none"> ➤ It should be temperature-programmable ➤ It should be with split/splitless facility ➤ Operating Temperature range 50 °C to 450 °C in 1 °C increments ➤ Heating rate of 1 °C/min to 200 °C/min or better ➤ Two-ramps temperature program or better ➤ Large-volume injection of up to 150 µL or better ➤ PPC pneumatics include automatic control of split vent by split flow or split ratio
GC Oven	<ul style="list-style-type: none"> ➤ Volume: approximately 10 Litres or more for easy fixing and removing different types/dimension of columns without compromising rate of heating or cooling of oven. ➤ Temperature range should 10-450 degree C or better ➤ All temperature and time functions should be micro-processor controlled and displayed on the screen, column over-heat protection, should be settable up to 450 °C, set point resolution

	<p>must be at least 1 °C and cool down time from 250 °C to 50 °C 5.0 min or less</p> <ul style="list-style-type: none"> ➤ The oven should have excellent temperature control and fast cool down system. ➤ Oven must accommodate upto two 30m × 0.25 mm id capillary columns. ➤ Maximum achievable temperature ramp rate should be 45 °C/min or more ➤ Temperature ramps should be 3 or more. ➤ Time settings: It should be 1 min increments for values 0 to 999 minutes or wider
Detector Features	<ul style="list-style-type: none"> ➤ Detectors should be controlled by EPC/PPC/AFC. <p>Flame Ionization Detector</p> <ul style="list-style-type: none"> ➤ Operating temperature: 100 °C to 450 °C in 1 °C increments ➤ Minimum detectable quantity: < 3 x10⁻¹² g C/sec ➤ Linearity: > 10⁷ ➤ Makeup gas: Not required (Preferred) ➤ FID should have minimum gas Consumption.
Software	<ul style="list-style-type: none"> ➤ Software should be capable of Full instrument control via external computer. ➤ Should be original, authenticated and versatility for multitasking without multiple software packages. ➤ Software performing data analyses at least as per DIN/ISO/US-EPA, calibration, blank correction, data import, export, handling and reporting, quality control protocols, computer based training. ➤ License copy of Software should be supplied along with GC system.
Power Supply	<ul style="list-style-type: none"> ➤ 220 V AC ±10%, 47 to 53 Hz.
Training	<ul style="list-style-type: none"> ➤ Vendor to provide comprehensive training related to operation, calibration, maintenance & safety of equipment at DAV College, Chandigarh immediate after acceptance of the equipment. ➤ However, vendor should also answer to the queries over phone & email whenever required
Consumables	<ul style="list-style-type: none"> ▪ Septa Thermogreen 11 mm Qty- 50 ▪ Manual Syringe 5ul – Qty 2

	<p>Injector:</p> <ul style="list-style-type: none"> ▪ Silanized Glass Wool ▪ Liner Split/Splitless Quartz ▪ Graphite Ferrule- 1/16 in. x 0.5 mm Qty: 10 ▪ Graphite Ferrule- 1/16 in. x 0.8 mm Qty: 10 ▪ Wafer-Ceramic Cutter Qty: 10 <p>Detector: Detector Adapter 1/8 in. to 1/16 in</p> <p>Columns: Capillary Column (5 column with dimensions 30m x 0.25 x0.25) Qty 1</p>
Upgradability	<ul style="list-style-type: none"> ▪ The GC should be upgradable to MS detector.

2) Automatic Digital Polarimeter

S.No	Description	Requirement
1.	Measuring Mode	Optical Rotation, Specific Rotation, Concentration, Sugar Degrees, Deg Z(ISS)
2.	Measuring Angular Scale	+/- 89.9 Deg Arc Optical Rotation
3.	Accuracy	0.005 Deg Arc for whole Range
4.	Resolution	0.001Deg Arc optical rotation
5.	Reproducibility	0.002 Deg Arc optical rotation
6.	Temperature probe Range	10 deg to 80 Deg C
7.	Temperature probe Accuracy	+/- 0.1 Deg C
8.	Prism	Glan Thompson calcite for life time guarantee with documentary proof
9.	Wave length	589 nm
10.	Measurement Time	8 measurements in less than 25 sec avg.
11.	Light Source	Tungsten Halogen Lamp/ LED lamp

12.	Sample chamber	Accepts sample tubes upto 200mm
13.	Inbuilt computer	System must be in built data storage facility at least 30GB/ must provide DELL computer i 7 generation
14.	Communication interface	3-USB Ports, 2-RS 232 Ports, Ethernet port for Network Connection
15.	Calibration	Automatic Calibration Via Touch screen
16.	Automatic Sensibility Control	Measures sample with transmittance as low as 0.01% (upto O.D.4.0)
17.	Input Power	100-240V, 50/60Hz