1. Tuning fork time marker 100/sec

- Should be made up of stainless steel with frequency marked

2. Electrodes

- Copper wire placed in holder made of non conductive material (cork, Plastic ect)
- With screw
- Shielded electrode two wire parallel to each other in layer of non conductive material
- Polarizable or non Polarizable electrode

3. Spirit Lamp

- Brass sheet die pressed, with woven wick in metal holder, screw
- Capacity 100 ml

4. Polysraphs

1 Technical Specification

1.1 No of Channels: 16

1.2 Ethernet/High Speed USB Data Acquisition and analysis Software.

1.3 Apparatus for recording and calculating HRV and blood pressure Variability, temperature

1.4 Transducers and software's for recording and analyzing plethysmography, GSR, Skin temperature, Continuous real-time beatto-beat blood pressure, Non Invasive Cardiac Out Put, respiration, phonocardiogram and pulse tonometer for carotid pulse, baroreflex sensitivity and total peripheral resistance recording.

1.5 21 inch TFT monitor

1.6 160 GB storage facility and 1GB RAM for the computer

1.7 Colour laser printer

1.8 Wireless (transmitter / recorder) device with transmit range up to 100m, memory capacity 480 hours, 250 Hz sampling rate, radio band frequency

2 Accessories, Spares and Consumables

2.1 Necessary cables and batteries

2.2 Computer (latest configurations) with laser printer to be attached to the equipment

3 Standards, Safety and Training

3.1 Should be CE / BIS approved product

3.2 Calibration/Acceptance test certificate from the factory required.

3.3 Manufacturer/Supplier should have ISO certification for quality standards.

3.4 Should have local service facility .The service provider should have the necessary equipments recommended by the manufacturer to carry out preventive maintenance test as per guidelines provided in the service/maintenance manual.

4 Documentation

4.1 User/Service Manual in English

4.2 Compliance Report to be submitted in a tabulated and point wise manner clearly mentioning the page/ para number of original catalogue/data sheet. Any point, if not substantiated with authenticated catalogue/manual, will not be considered.

5 Multi-channel universal bio-amplifier for ECG, EMG, EEG, EOG (at least 8 channels) along with cardio axis analysis.

6 Bidders are encouraged to arrange for demonstration of their equipment if not able to comply with all specification requirements.

5. Gas analyser automatic for CO2, O2, N2

- Minimum detection limit (MDL) for N2, O2/Argon, CO & total hydrocarbon containing oxygenated organic species (As Methane form) ≤ 50 ppb.
- Minimum detection limit (MDL) for CO2 ≤ 0.1 ppm.
- Analyzer 2 requires three analytical channels which can run simultaneously or separately. Carrier gas to be used in analytical channels 1 & 3 is He.
- Analytical channel 1, for the analysis of N2, O2/Ar•& CO, to feature an 8 port multifunction gas sampling valve with backflush to vent by mid-point pressure change, a PLOT capillary column system and a Discharge Ionization Detector (DID). The valve and all connections to the columns are contained in an unheated, purged box mounted on the side of the GC.
- Analytical channel 2, for detection of CO, CO2 & CH4, to feature a multiple function Gas Sampling Valve, Methanizer, Flame Ionization Detector & suitable packed column.
- To optimize performance at the trace levels, the analyzer is plumbed with "passivated tubing". The gas valve is mounted in a purged housing. The purged housing is filled with a positive pressure of carrier gas. Once CO2 has fully eluted, column must backflush to vent.
- THC channel 3 to provide a guaranteed analysis of trace total hydrocarbons measured as methane. To maximize performance, treated tubing is used as needed throughout the analyzer.
- Analytical channel 3 to feature a Gas Sampling Valve and a Flame Ionization Detector (FID). FID to be used in common by Channel 2 & 3.
- Analyzer 2 requires Gas Sampling Valves, one Discharge Ionization Detector (DID), one Flame Ionization Detector (FID), Methanizer & Suitable columns.
- Analyzer 2 should consist of a 4 port valve configured with an auxiliary flow source to provide continuous flow while venting the majority of the matrix sample before the detector.
- The sample input for this analyzer should be VCR fitting; required in order to eliminate any air leakage into the sample when passed through the analyzer's sample loop.
- 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.
- Power Supply: 220 VAC ±10%, 47 to 53 Hz.

Sub Components:

Gas Flow Control:

- Standard with programmable pneumatic control; Digital Pneumatic Control for setting column flow with pressure, flow and linear velocity.
- Carrier gas pneumatic program rates 0-100 psi/min or 0-100 ml/min or better.
- Three-ramps pressure program for carrier gas. –

- Carrier pressure increment should be 0.1 psi or better.

GC Oven Characteristics:

- Volume ≥ 10L; for easy fixing and removal of different column types/dimensions without compromising rate of heating or cooling of oven.
- All temperature and time functions should be micro-processor controlled and displayed on the screen.
- Column over-heat protection required.
- Temperature set point resolution ≤ 1°C.
- Oven Operating temperature: (Ambient+10)°C to 450°C.
- Temperature ramps ≥ 3; Maximum achievable temperature ramp rate ≥ 45°C/min.
- Cool down time (from 250°C to 50°C) ≤ 4.8 min.
- Time settings: 1 min increments for values 0 to 999 minutes or wider.

Flame Ionization Detector (FID):

- Operating Temperatures: 100°C to 350°C; in 1°C increments.
- Minimum detectable quantity:
- Sensitivity: >0.015 Coulombs / g C.
- Linearity: > 107.
- Makeup gas: Not required
- PPC pneumatics: Software flow control of hydrogen and air.

Software:

- 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.

6. Low voltage unit for tapping 2 and 4 volts for stimulation

- Low voltage unit for tapping 2 and 4 volts for stimulation variable from 2 volts to 12 volts in steps of 2 volts and of 5 A capacity. Complete with plug and cord.

7. Knee hammer

- Triangular Head, well grip handle, concealed brush with slide lock needle 20cm long

8. Perimeter with charts

- Should have a calibrated arc, revolving chart holder.
- Should be able to rotate in any direction and fix at any position with a tightening screw. The arc should be graduated from 0° to 90° with a movable test object.
- At the back of the arc arrangement should be provided for fixing of chart which has concentric circles corresponding to the degrees of arc.

- Adjustable chin rest.
- The above mentioned should be fitted over a sturdy base with receptacle for keeping charts.

Accessories:

- Different sized (2mm & 5mm), shaped (round & square) and coloured (five different) objects.
- Should be supplied with 20 packets of charts (100 charts/packet).
- Circular black disc to read the meridian in which the arc in shape of a semicircle with radius 330mm Adjustable chart rest and a detachable lever in a bar is fixed in front of metallic arc

9. Tuning fork to test hearing 32-10000 cps(sets-100, 256, 512 Hz)

- Turning fork to test hearing 32-10000 cps (sets :-100, 256, 512 Hz) each tuning fork with base
-

10. Student physiograph, (single channel) with accessories

- Student Physiograph single channel console with Time & event channel and inbuilt stimulator for Human experiments.
- Should have a digital display on an inbuilt TFT screen 15.5x9.5 cm.
- Channel width: 80mm, A/D Conversion: 16-bit A/D, CMRR:>80-85 db sensitivity: 50, 100, 200, 500, uv/cm and 1,2,5,10,20,50,100 mv/cm, Sweep speed: 0.5, 1,2,5,10,20,50,100 div/sec,
- Notch filter: 50-60 Hz, Data sampling>256 Hz, Input frequency, Input Impedance:>1 mega Ohm.
- Standalone unit having colored TFT Display for displaying online & offline recording data.
- Systems have six couplers fitted in a Single unit, easy to carry & light weight (Strain gage, Isotonic, Pulse Respiration. Temperature, EKG, Bio potential).
- System with Eight Transducers (Force, Pressure, Volume, Respiration, Temperature, Pulse, Respiration Belt and Isotonic)-Interface to the computerthrough USB.
- System provides with software to review and printing the recorded data from PC.
- Accessories include electrodes (ECG, EEG, ECG, Ground) Bio potential junction box , EEG & EMG paste, ECG jelly, Fuses-5, ear thing cord-1, operating manual-1, machine cover-1, software back up on CD-1 & USB cable-1.

11.Centrifuge, high speed with technometer

- Centrifuge with technometer -10,000 rpm, digital, dust cover and glass wares.

- Speed Range 500 to 4500 rpm on load with variable speed regulator
- It should be fitted with digital timer 0-59 minutes and digital speed indicator, LED/LCD display.
- The motor of machine should be fitted with anti-vibration pads.
- Capacity– Can accommodate 24 tubes at a time