Terms of Reference and Specifications for the Procurement of Preventive Maintenance and Calibration Services of various Microbiological Equipment

(Autoclave, BSC, ELISA Reader, IR Gun Thermometer, Ultrasonic Cleaner, Incubator)

Delivery Terms:
Item 1: 1-2 weeks from the acceptance of P.O.

Payment Terms:

30 days upon full delivery of services, inspection and acceptance

Important Conditions:

- Testing must be accredited by PAB ISO/IEC 17025:2017. All with Calibration Certificate, traceable to the International Standards of Measurement;

- Includes Certificate of Calibration, and PM or Service Maintenance Report

Warranty: For Equipment -Three (3) months warranty on parts and services

Preventive Maintenance & Calibration services for:

1 UNIT **Autoclave, Dry Front Load**
Brand/Model: Equitron 7482545

Scope of Services:

1. Cleaning of the Exterior/Interior Surfaces of the Machine.
2. Visual Inspection:
   a. Check the physical condition of the autoclave, including the door, gaskets, chamber, and control panel.
   b. Inspect for signs of wear, damage, or corrosion, particularly around seals and gaskets.
3. Door and Seal Integrity:
   a. Ensure the door seal is intact and the door locks securely during operation.
   b. Check for any leaks or steam escaping from the door during the cycle.
4. Safety Valve and Pressure Gauge Check:
   a. Verify that the safety valve is functioning correctly and releases pressure at the set point.
   b. Ensure the pressure gauge is functioning accurately and shows correct pressure readings during the cycle.
5. Temperature Distribution Test

a. Place temperature probes at different locations inside the chamber to ensure uniform temperature distribution during the cycle.
b. Verify that there are no cold spots, which could compromise sterilization.

6. Timer Accuracy
7. Water Level and Steam Generator:
    a. Check the water level in the reservoir and ensure the steam generator is functioning correctly.
    b. Verify there are no blockages or scale buildup in the steam generator.
8. Cycle Validation
9. Exhaust and Cooling Systems:
    a. Verify that the exhaust system is functioning correctly and the cooling phase is operating within acceptable parameters.
10. Alarm Functionality
11. Checking of Electrical Components.
12. **Measurement Parameters**
    a. Temperature Calibration
        i. Set Point: 121°C ± 1°C; 134°C
    b. Pressure Calibration
        i. Set Points: 15 psi at 121°C and 30 psi at 134°C
    c. Timer Calibration (Compare the autoclave's timer with a certified stopwatch or timer and ensure the timer is accurate within ±1% of the set time)
    d. Temperature Sensor Calibration
    e. Biological Indicator Testing

Note: Adjustment of General Cooler/Mini Incubator (if necessary).

13. Ensure that all calibrations are traceable to national or international standards.
14. All calibration and PM tasks are documented, with detailed records of test results, adjustments made, and any parts replaced.
15. Use calibrated and certified reference equipment for all measurements to comply with ISO 17025.

Deliverables: Certificate of Calibration and PM/Service Maintenance Report

Warranty: For Equipment -Three (3) months warranty on parts and services

1 UNIT **Biosafety Cabinet B-II-A2-13**
Brand/Model: Medfuture B-IIA2-13

Scope of Services:

1. Cleaning of the Exterior/ Interior Surfaces of the Machine.
2. Checking of Electrical Components.
3. **Measurement of Parameters:**
   a. Inflow Velocity Test
   b. Down Flow Velocity Test
   c. Site Installation, Alarms Verification Test
   d. Smoke Pattern Test
   e. UV Light Radiation Test
   f. Light Intensity Test
   g. Noise Level Test
   h. Filter Leak Particle Count Scan

   Note: Adjustment of Biosafety parameters (if necessary)

4. All calibration and PM tasks are documented, with detailed records of test results, adjustments made, and any parts replaced.
5. Use certified and calibrated instruments for all measurements.
6. Follow the manufacturer's guidelines and standards such as NSF/ANSI 49 for Class II BSCs.

Deliverables: Certificate of Calibration and PM/Service Maintenance Report

Warranty: For Equipment -Three (3) months warranty on parts and services

1 UNIT **General Cooler/Mini Incubator**
Brand/Model: HXTS IPO-19/398-026

Scope of Services:

1. Cleaning of the Exterior/ Interior Surfaces of the Machine.
2. Checking of Electrical Components.
3. **Measurement of Parameters:**
   a. Temperature Calibration
      i. Set Points:
         1. 35°C ± 0.5°C
         2. 44.5°C ± 0.2°C
         3. 22°C ± 2°C
         4. 27°C ± 2°C

ii. uniformity Test
iii. recovery and stability Test
iv. Thermostat Calibration

b. Lock Seal Integrity
c. Alarm Functionality Check
d. Control System and Display Check

Note: Adjustment of General Cooler/Mini Incubator (if necessary).

4. Ensure that all calibrations are traceable to national or international standards.
5. All calibration and PM tasks are documented, with detailed records of test results, adjustments made, and any parts replaced.
6. Use calibrated and certified reference equipment for all measurements to comply with ISO 17025.

Deliverables: Certificate of Calibration and PM/Service Maintenance Report

Warranty: For Equipment -Three (3) months warranty on parts and services

3	UNIT	**IR Gun Thermometer** **Brand/Model: SENZE INSTRUMENTS SI-672**

Scope of Services:

1. Visual Inspection
   a. Check for physical damage to housing and lens.
   b. Verify cleanliness of lens and remove any dust or smudges.
   c. Inspect battery compartment for corrosion or damage.
2. Battery and Power Check
3. Functionality Check
   a. Check operation of laser pointer (if applicable).
   b. Test all buttons and settings (Celsius/Fahrenheit, emissivity, etc.).
4. Display and Settings Verification
5. Measurement Consistency/reproducibility
6. Ensure that all calibrations are traceable to national or international standards.
7. All calibration and PM tasks are documented, with detailed records of test results, adjustments made, and any parts replaced.
8. Use calibrated and certified reference equipment for all measurements to comply with ISO 17025.

Deliverables: Certificate of Calibration and PM/Service Maintenance Report

Warranty: For Equipment -Three (3) months warranty on parts and services

1 **UNIT** **Ultrasonic Cleaner**
Brand/Model: DC-80H

Scope of work:

1. Cleaning of Exterior/Interior surfaces including tank of the unit and function testing.
2. Transducer and Ultrasonic Efficiency Check
3. Verify that the temperature setting
4. Electrical Components Checking
5. Cleaning Time Validation
6. Ensure that all calibrations are traceable to national or international standards.
7. All calibration and PM tasks are documented, with detailed records of test results, adjustments made, and any parts replaced.
8. Use calibrated and certified reference equipment for all measurements to comply with ISO 17025.

Deliverables: Certificate of Calibration and PM/Service Maintenance Report

Warranty: For Equipment -Three (3) months warranty on parts and services

Purpose: The procurement of preventive maintenance and calibration services for microbiological equipment—such as autoclaves, biosafety cabinets, ELISA readers, IR gun thermometers, ultrasonic cleaners, and incubators—ensures accurate measurements and compliance with standards like ISO 17025. Regular maintenance extends equipment lifespan, reduces breakdown risks, enhances laboratory productivity, and improves safety by identifying potential hazards. Thus, this services, minimize long-term repair expenses and support consistent operations in microbiological testing.