1. Introduction

All candidates must undertake five practical exercises and write them up to the standard of a laboratory note book or field notes for marking by the course tutor during the course. These practical exercises are an essential part of the examination process and will be subject to random audit by BOHS for quality assurance purposes.

2. The Practical Requirements

The practical exercises should be designed by the course tutor(s) to test the basic skill of the candidate in making measurements of conditions for the purpose of assessing the thermal environment. The exercises must, therefore, involve;

- The setup and use of a static dry bulb and natural wet bulb thermometer
- The setup and use of a whirling hygrometer and calculation of relative humidity
- The setup and use of a Kata thermometer and calculation of non-directional air movement
- The setup of a globe thermometer and use of measurement data from this and the dry bulb/natural wet bulb thermometers to calculate a WBGT value; alternatively a WBGT instrument may be used
- The use of monitoring equipment such as those described above, or alternatively real-time monitoring equipment, for assessment of working environments in respect of heat stress and/or thermal comfort. This exercise should include some example environmental data to test the candidate’s ability to consider work regimes to reduce the risks to workers. This work should involve the use of tables and charts to interpret results.

Access to reference material and written procedures is allowed during these exercises.

3. Reporting and Marking

The setup and measurement study should be written up to the standards expected for a laboratory note book or field notes report and handed in for assessment at the end of the practical exercise. The candidates must include all readings and calculations so that they can be checked.

Notes for each practical exercise should contain the following elements:

a) Name of candidate
b) A brief description of the process or situation
c) Environment involved
d) Equipment used
e) Monitoring information
f) Calculation of results
g) Interpretation and recommendation (if appropriate)
The laboratory note book or field notes reports must be handed in at the completion of the practical session and retrospective reporting will not be allowed. The course provider/tutor will assess each practical note book report and compile a report per candidate as per the attached form.

The tutor must return the practical evaluation report for each candidate to BOHS within 5 days of the course completion.

4. Benchmark Marking Schedule

As the tutor is responsible for designing suitable studies it is not practicable to provide a fully detailed predefined marking schedule. However the following are examples of what the tutor needs to look for in each case and are provided for guidance.

a) Setup and reading of a static wet and dry bulb thermometers and calculation of humidity etc.

**Visual Check**
- Static wet and dry bulb thermometers correctly mounted
- Instrument allowed sufficient time to stabilize

**Marking of Write Up**
- Calculation from data and use of psychrometric chart

b) Setup and use of a whirling hygrometer and calculation of relative humidity

**Visual Check**
- Thermometers correctly mounted in whirling hygrometer
- Wet bulb wick sufficiently wetted
- Instrument whirled for sufficient time

**Marking of Write Up**
- Calculation from data and use of psychrometric charts

c) Set up and use of a Kata thermometer

**Visual Check**
- Thermometer correctly positioned
- Bulb wiped dry after immersion in hot water
- Cooling period correctly timed

**Marking of Write Up**
- Calculation of air speed from calibration chart

d) Set up of globe thermometer or WBGT instrument and calculation of a WBGT value

**Visual Check**
- Globe thermometer correctly positioned
- Instrument allowed sufficient time to stabilize

**Marking of Write Up**
- Calculation of WGBT using appropriate data for indoor and/or outdoor environmental data
e) Use of monitoring equipment for assessment of working environments in respect of heat stress and/or thermal comfort.

**Visual Check**
- Selection of measurement equipment correct
- Positioning and set up of measurement equipment correct

**Marking of Write Up**
- Calculation of appropriate parameters from data
- Interpretation of data correct

The tutor must return the practical evaluation report for each individual candidate to BOHS within 5 days of the course completion.
## International Module

### W502 – Thermal Environment

#### Formative Practical Evaluation Report

<table>
<thead>
<tr>
<th>Name of Candidate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Birth</td>
<td>Date of Evaluation</td>
</tr>
<tr>
<td>Evaluation Location</td>
<td></td>
</tr>
<tr>
<td>Course Provider</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pass/Fail</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up and use of static wet and dry bulb</td>
<td></td>
</tr>
<tr>
<td>Set up and use of whirling hygrometer</td>
<td></td>
</tr>
<tr>
<td>Set up and use of Kata thermometer</td>
<td></td>
</tr>
<tr>
<td>Set up Globe thermometer and calculate WBGT</td>
<td></td>
</tr>
<tr>
<td>Use of monitoring equipment to assess heat stress and/or thermal comfort situations</td>
<td></td>
</tr>
</tbody>
</table>

### Overall Decision

| Name of tutor covering practical evaluation |  |
| Signature of tutor covering practical evaluation |  |

**Please Note:** Information entered into the comments column can be given to the candidate for re-sit purposes.
International Module

W502 - Thermal Environment

Formative Practical Assessment — Guidance for Candidates

1. Introduction

Candidates taking the W502 international examination in “Thermal Environment” are required to demonstrate that they have appropriate practical skills in field measurements and assessment. Therefore, all candidates must undertake five practical exercises and write these up to the standard of a laboratory note book or field notes, for marking by the course tutor during the course. This will be regarded as an essential part of the examination process.

2. The Practical Requirements and Reporting

The practical exercises are designed to test the basic skill of the candidate in assessing thermal environment conditions.

- The setting up and reading of static wet and dry bulb thermometers and calculation of humidity etc
- The set up and use of a whirling hygrometer and calculation of humidity etc
- The set up and use of a Kata thermometer and calculation of non-directional air movement
- Set up a globe thermometer and calculation of WBGT values
- The use of monitoring equipment such as those described above, or alternatively real-time monitoring equipment, for assessment of working environments in respect of heat stress and/or thermal comfort. This exercise should include some example environmental data to test the candidate’s ability to consider work regimes to reduce the risks to workers. This work should involve the use of tables and charts to interpret results.

Access to reference material and written procedures is allowed during these exercises.

For each of the above exercises the candidate should:

a) Select the appropriate equipment for the relevant measurement
b) Correctly assemble and stabilise the equipment
c) Read off the relevant values
d) Correctly calculate the requested parameters
e) Use direct reading instruments correctly, where provided
f) Calculate and interpret exposure data and make suitable recommendations
g) Submit a brief written practical report for the exercise

Each set up and measurement study should be written up to the standards expected for a laboratory note book or field notes report and handed in for assessment at the end of the practical exercise. The candidates must include all readings and calculations so that they can be checked.
Each practical note book or field notes report should contain the following elements:

a) Name of candidate  
b) A brief description of the process or situation  
c) Environment involved  
d) Equipment used  
e) Monitoring information  
f) Calculation of results  
g) Interpretation and recommendation (if appropriate)

Assessment of practical laboratory note book or field notes reports

The laboratory note book or field notes reports must be handed in at the completion of the practical session as retrospective reporting will not be allowed. The course provider/tutor will assess each practical note book report and return the practical evaluation report for each candidate to BOHS.