Mansoura University
Faculty of Computer Science
Information systems The First Year
Exam. Of Fundamentals of Computer Science

Date: 1/2/2010
Time: 3 hours
Full Mark: 60 Points

Answer the Following Questions

**Question No. 1**
[15 Point]
1.1 What is computer science?
1.2 Mention the fields of computer science.
1.3 What is the difference between data mining and relational databases?
1.4 What is an operating system?
1.5 Explain the benefits of E-mail?

**Question No. 2**
[15 Point]
2.1 Find the equivalent in base 10 of the following \( \text{110101101}_2 \), \( \text{70.101}_8 \)
2.2 Calculate the following in base 2:
   a. \( 110.11 + 11001.1 = ? \)
   b. \( 11101 - 11000 = ? \)
   c. \( 11101 \times 1101 = ? \)
2.3 Find 1's complement and 2's complement in base 2:
   a. \( \text{10011} \)  b. \( \text{11011} \)  c. \( \text{11001} \)
2.4 What is the difference between:
   a. Hardware and Software
   b. LAN and WAN
2.5 Given four of examples for international search engine.

**Question No. 3**
[15 Point]
3.1 Explain the main parts of a personal computer?
3.2 Mention the components of main menu of Microsoft word.
3.3 Choose the correct answer of the following:
   3.3.1 Opening a new word document provides a clean page, with no text or formats. To open a new word document, you should do which of the following?
   a. Press Ctrl + N.
   b. Choose new from the file menu
   c. Click the new button on the standard toolbar.
   d. Close any open documents and choose new from the file menu.
3.3.2 The shift + F3 keystroke combination cycles through which of the following letter case styles?
3.3.3 In Using formulas, to calculate a total use:
   a. Auto sum
   b. Clipboard
   c. Drag and drop
   d. The auto fill feature.
3.3.4 What is the default margin for a word document?
   a. Top and bottom are 1 inch; right and left are 1.5 inches.
   b. Top, bottom, right, and left are all 1 inch.
   c. Top and bottom are 1.5 inches; right and left are 1 inch.
   d. Top, bottom, right, and left are all 1.5 inches

**Question No. 4**

4.1 The following table shows the sales of a small company along a year in US $

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>3400</td>
<td>3000</td>
<td>2800</td>
<td>4000</td>
<td>3700</td>
</tr>
<tr>
<td>2200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Build a worksheet in excel to calculate the following:
   a. Average sales / Month.
   b. Standard deviation.

4.2 Calculate the mean and variance of the following data:

<table>
<thead>
<tr>
<th>Classes</th>
<th>Frequencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>2</td>
</tr>
<tr>
<td>5-9</td>
<td>4</td>
</tr>
<tr>
<td>9-13</td>
<td>5</td>
</tr>
<tr>
<td>13-17</td>
<td>3</td>
</tr>
<tr>
<td>17-21</td>
<td>4</td>
</tr>
<tr>
<td>21-25</td>
<td>6</td>
</tr>
<tr>
<td>25-29</td>
<td>2</td>
</tr>
</tbody>
</table>

**Good Luck**

*Assist. Prof. MAGDI ZAKARIA*