Q(1-A): Design a program that it's aim is creating a simple calculator which can do the basic operations (Adding(+), Subtraction(-), Multiplication(*) and Division(/)), create five (Command Buttons) objects, one of them will be used to exit from the program, while four of them will do the operations, also use two (Text Box) objects to input the numbers and one (Text Box) object to get results.

Q(1-B): Draw a flow chart represents Writing a program by visual basic language.

Q(2-A): Design a program to print on the form the table below:

<table>
<thead>
<tr>
<th>Alloys</th>
<th>Tensile Strength</th>
<th>Proof Stress</th>
<th>Hardness (Vickers)</th>
<th>Hardness (Rockwell)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CuZn30</td>
<td>Soft</td>
<td>300</td>
<td>160</td>
<td>70</td>
</tr>
<tr>
<td>CuZn30</td>
<td>Hard</td>
<td>420</td>
<td>470</td>
<td>130</td>
</tr>
<tr>
<td>CuZn37</td>
<td>Soft</td>
<td>320</td>
<td>200</td>
<td>70</td>
</tr>
<tr>
<td>CuZn37</td>
<td>Hard</td>
<td>450</td>
<td>490</td>
<td>135</td>
</tr>
</tbody>
</table>

Create a (Command button) to exit from the program, use (Arial) font (Bold) with the size (14). Let the program calculate the average hardness for each alloy.

Q(2-B): Draw a flow chart represent the (Select Case) command.

Q(3): Design a program to create a (Diagonal Array) with the size (12,12) with a name (q), store the number (8) in the major and the secondary diagonal of the array and don't store any number in all other cells of the array, print the array on the form by the font (Tahoma), (Bold) with the size (14), leave (6) spaces between the cells of the dimension horizontally and two spaces vertically.

Q(4): Design a program to calculate the value of (F) from the equation below:

\[
F = \frac{1}{2} \rho A V^2 + \mu + \varepsilon
\]

Where: \((\rho = 1000, a = 0.0002, V = 50, \mu = 230, \varepsilon = 870)\)

Let the program calculate the value of (F) if the value of (p) changes as \((p = 5, p = 105, p = 205, p = 305..., \ p = 905)\), print the results on the form, print the value of (p) on the column (15) and the value of (F) on the
column (40), use the font (Times New Roman), (Bold) with the size (12. Use (While...Wend) to solve the question. Create a (Command button) to exit from the program. (20 marks)

Q5:- Design a program to calculate the value of \( y \) from the equation below:

\[
y = \frac{9}{\sqrt{B^2}} + e^c + \frac{D^3}{E} + |F| + \cos(x) + \frac{G}{H}
\]

Where:

\[
A = 24.2 \times 10^{14}, \quad B = 2.3 \times 10^{18}, \quad C = 100, \quad D = 1.8 \times 10^{24}, \quad E = 5.7 \times 10^{-8}, \quad F = -8.7 \times 10^{-10}, \quad G = 900, \quad H = 42.7 \times 10^{-7}, \quad x = 45.
\]

Create a (Label) object and a (Text Box) object for each parameter of the equation and two (Command Buttons), one for exit from the program and the other one is for making the calculations. (20 marks)

Q(6-A):- Draw the following figure on the form by using the (PSET) command with (For-Next) loop. (10 marks)

Q(6-B):- Write about:

1- (Picture Box) object. 2- (Check Box) object.
3- (Dir List Box) object. 4- (Shape) object. (10 marks)

GOOD LUCK