

The exam is open book and open notes. You may use your course text book and your notes and handouts for this class.

Problem 1 (4 points). Are the following valid Windows file names?

___ Yes __X_ No “Who is there?”
Why or why not? **You can not use “?” in a file name.**

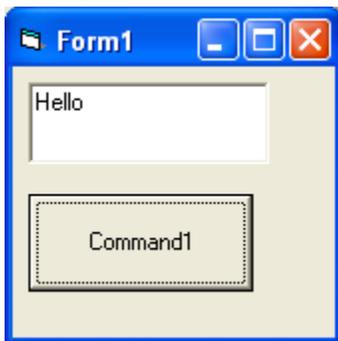
___ Yes __X_ No “FOUR STAR HOTEL *****”
Why or why not? **You can not use “*” in a file name.**

Problem 2 (2 points). Is “C:\Sales\New York” a Windows file name or a path name?

___ File name __X_ Path name

Problem 3 (2 points). Describe the contents of the text box after the command button has been clicked:

```
Private Sub Command1_Click()  
    Text1.Text = "Hello"  
End Sub
```



Problem 4 (4 points). Write one or two lines of VB code to carry out the task:

- a. Display “E.T. phone home.” in a text box Text1.

```
Text1.Text = "E.T. phone home."
```

- b. Display “Hello” in red letters in text box Text1.

```
Text1.ForeColor = vbRed  
Text1.Text = "Hello"
```

Problem 5 (4 points). Evaluate the following numeric expressions:

a. $1/(2^5) = \underline{1/32} = \underline{0.03125}$

b. $3*(-2)^5 = \underline{-3*2^5} = \underline{-3*32} = \underline{-96}$

Problem 6 (10 points). Are the following names valid Visual Basic variable names?

- | | <u>Name</u> |
|--|-------------|
| a. ___ Yes <input checked="" type="checkbox"/> No. | sales.2003 |
| b. <input checked="" type="checkbox"/> Yes ___ No. | fOrM_1040 |
| c. ___ Yes <input checked="" type="checkbox"/> No. | expenses? |
| d. ___ Yes <input checked="" type="checkbox"/> No. | room&board |
| e. ___ Yes <input checked="" type="checkbox"/> No. | 1040B |

Problem 7 (10 points). Evaluate the following numeric expressions where $a = 2$, $b = 3$, and $c = 4$

- | | |
|------------------|----------------------|
| a. $(a * b) + c$ | Value: <u> 10 </u> |
| b. $(1 + b) * c$ | Value: <u> 16 </u> |
| c. $b ^ (c - a)$ | Value: <u> 9 </u> |
| d. $a * (b + c)$ | Value: <u> 14 </u> |
| e. $(c - a) ^ b$ | Value: <u> 8 </u> |

Problem 8 (2 points). Write an event procedure [Private Sub Command1_Click()] to calculate and display the value of the following expression in a picture box named "Pic1"

$$\text{Expression} = 15 - 3(2 + 3^4)$$

```
Private Sub Command1_Click()
```

```
    Expression = 15 - 3 * (2 + 3 ^ 4)
    Pic1.Print Expression
```

```
End Sub
```

Problem 9 (8 points). Complete the following table by filling in the value of each variable after each line is executed

	x	y
Private Sub Command_Click()		
x = 2	2	
y = 3 * x		6
x = y + 5	11	
Picture1.Cls		
Picture1.Print x + 4	11	6
y = y + 1		7
End Sub		

Problem 13 (4 points). Suppose a ball is thrown straight up in the air with an initial velocity of 50 feet per second and an initial height of 5 feet. How high will the ball be after 3 seconds? (Note: The height after t seconds is given by the expression $h = -16t^2 + v_0t + h_0$.) Write an event procedure [Private Sub Command1_Click() ... End Sub] to solve the problem and display the answer in a picture box named "Pic1".

```
Private Sub Command1_Click()

    T = 3
    V0 = 50
    H0 = 5
    H = -16 * T * T + V0 * T + H0
    Pic1.Print H

End Sub
```

Problem 14 (4 points). Assume that the file DATA.TXT (shown to the right of the code) has been opened for input with reference number 1. Determine the output displayed in the picture box by the lines of code.

Dim num As Integer, strng As String	DATA.TXT
Input #1, num, strng	4, "calling birds"
Picture1.Print num; strng	3, "French hens"
Close #1	
Open "DATA.TXT" For Input As #1	
Input #1, num, strng	
Picture1.Print num; strng	

Output: 4 calling birds
4 calling birds

Problem 15 (8 points). Determine if the following conditions are true or false. Assume $a = 2$ and $b = 3$

Condition

- True False $a^{(5-2)} > 7$
- True False $(a < b) \text{ Or } (b < a)$
- True False $\text{Not } ((a < b) \text{ And } (a < (b + a)))$
- True False $((a = b) \text{ Or } \text{Not } (b < a)) \text{ And } ((a < b) \text{ Or } (b = a + 1))$

Problem 16 (2 points). Determine the output displayed in the picture box when the command button is clicked.

```
Private Sub Command1_Click()
    Dim a As Single, b As Single, c As Single
    a = 2
    b = 3
    c = 5
    If a * b < c Then
        b = 7
    Else
        b = c * a
    End if
    Picture1.Print b
End Sub
```

Value Displayed: _____10_____

Problem 17 (14 points). The following flowchart finds the greatest common divisor (the largest integer that divides both) of the two positive integers input by the user. Write a Visual Basic program that corresponds to the flowchart.

