

CPSC 231 Midterm Review: Winter 2006

Part I: Multiple choice (select the best answer to each question)

1. What is the programming language that is used for the program writing assignments in this class?
 - a. Pascal
 - b. C++
 - c. Visual Basic
 - d. Java
 - e. What??? We're actually supposed to write programs for this class!!!
2. Which of the following UNIX commands could you use to view the contents of a directory?
 - a. cd
 - b. ls
 - c. rm
 - d. (a) & (c)
 - e. None of the above
3. Which area of Computer Science focuses primarily on representing information in a way that makes the information easier to find and use?
 - a. Graphics
 - b. Artificial Intelligence
 - c. Data bases
 - d. Information Visualization
 - e. Human-Computer Interaction
4. Which of the following is a correct ranking the following from smallest to largest units of storage (for the word size use a modern desktop computer)?
 - a. Byte, bit, word
 - b. Bit, byte, word
 - c. Word, bit, byte
 - d. Word, byte, bit
 - e. None of the above
5. What does the 'R' refer to for CD-R drives??
 - a. You have permission to read information from the CD
 - b. You can record information onto the CD
 - c. You can rewrite to CD (record and erase information multiple times)
 - d. This CD is a next generation rapid-format CD
 - e. None of the above are true
6. What is the binary equivalent of the octal number 36?
 - a. 8
 - b. 30
 - c. 36
 - d. 11110
 - e. None of the above

7. What is the base ten equivalent of the decimal number 27?
- a. 10
 - b. 1B
 - c. 27
 - d. 33
 - e. 11011
8. What is the decimal result of performing the subtraction (via the ones complement approach) of the decimal numbers -1-3 using a computer with a 3 bit word size?
- a. +3
 - b. -3
 - c. +4
 - d. -4
 - e. -7
9. What will be the output of the following program? (<SP> is used to show a space)

```
program intro (output);
begin
  write('hel':3);
  writeln('@':3);
end.
```

- a. hel@
- b. 'hel':3 '@':3
- c. hel<SP><SP>@
- d. <SP><SP>hel@
- e. hel@<SP><SP>

10. What will be the output of the following program?

```
program decision (output);
begin
  var num : integer;
  num := 27;
  if (num > 1) then
    write('a')
  else if (num > 10) then
    write('b')
  else if (num > 100) then
    write('c');
end.
```

- a. a
- b. b
- c. ab
- d. abc
- e. None of the above

11. How many times will the loop in the following program execute?

program loop (output);

```
begin
  var i : integer;
  i := 10;
  while (i < 4) do
  begin
    write(i);
    i := i + 1;
  end;
end.
```

- a. 1
- b. 9
- c. 10
- d. The loop will never execute
- e. None of the above

12. Which of the following while-do loops is the *most* similar in logic to the for-loop shown below?

```
for i := 1 to 4 do
  write(i, ' ');
```

- a.

```
i := 1;
while (i < 4) do
begin
  write(i, ' ');
  i := i + 1;
end;
```
- b.

```
i := 1;
while NOT (i < 4) do
begin
  write(i, ' ');
  i := i + 1;
end;
```
- c.

```
i := 4;
while (i >= 1) do
begin
  write(i, ' ');
  i := i - 1;
end;
```
- d.

```
i := 1;
while (i <= 4) do
begin
  i := i + 1;
  write(i, ' ');
end;
```
- e.

```
i := 1;
while (i <= 4) do
begin
  write(i, ' ');
  i := i + 1;
end;
```

Part II: Short answer

Question 1: In the space provided below trace the output of the following program.

program practiceFun (output);

var

```
var1 : integer;  
var2 : integer;
```

```
procedure proc ( var3 : integer;  
                var var4 : integer);
```

var

```
var2 : integer;
```

begin

```
var2 := 10;  
var3 := 20;  
var4 := 30;  
writeln('3:', var2);  
writeln('4:', var3);  
writeln('5:', var4);
```

end;

```
function fun (var2 : integer):integer;
```

begin

```
fun := var2 + 1;
```

end;

begin

```
var var2 : integer;
```

```
var1 := 1;  
var2 := 2;  
writeln('1:', var1);  
writeln('2:', var2);  
proc(var1, var2);  
writeln('6:', var1);  
writeln('7:', var2);
```

begin

```
var var2 : integer;
```

```
var2 := 0;  
var2 := fun(var2);  
writeln('8:', var1);  
writeln('9:', var2);
```

end;

```
writeln('10:', var1);
```

```
writeln('11:', var2);
```

end.

<< Write your answer here >>

Question 2:

Write the code for procedure 'swap' that will take two integers as parameters, num1 and num2, and *swaps the contents of these memory locations* so the output of the writeln should be: 17 11

program moduleCoding (output);

<< Write your answer here >>

<< End of answer space >>

```
begin
  var num1 : integer;
  var num2 : integer;

  num1 := 11;
  num2 := 17;
  swap(num1,num2);
  writeln(num1, ' ', num2);
end.
```

Question 3:

Suppose that when you compile and run the program below you get as output the following value: '-1073742780'. Explain why you get this value.

```
program oddProgram (output);  
begin  
  var num : integer;  
  writeln(num);  
end.
```

<< **Write your answer here** >>

JT: Liked the practice exam, then you'll love the real thing!

