

CPSC 231, Midterm Review: Spring 2005

Short answer

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** >>

<< **End of answer space** >>

2. For program 'formatting' what must values must num1 and num3 in order to produce the following output (SP is a space)?

```
program formatting (output);
begin
  var num1 : integer;
  var num2 : real;
  var num3 : integer;

  num1 := ???;
  num2 := 1234.567;
  num3 := ???;

  write('hello':num1, num2:num1:num3);
end.
```

(Desired output):

<SP><SP>hello<SP>1234.6

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

Multiple choice

1. How does the Turing test work?
 - a. Because it is important to consider the human and the technological perspective when developing software the Turing test requires that the developer visit each potential user onsite.
 - b. The software program asks a test participant a series of questions, if the questions are deemed as appropriate then an artificial intelligence has been created.
 - c. A test participant asks another person a series of questions in order to determine how people solve problems (thus employing the top down approach to creating an artificial intelligence).
 - d. A test participant asks another person and a software program a series of questions. If from the answers given, the test participant cannot tell the difference between the person and the program then an artificial intelligence has been created.
 - e. None of the above.
2. What would be a reasonable amount of hard drive space that you would expect for a *new computer today*?
 - a. 1 KB
 - b. 1 MB
 - c. 120 MB
 - d. 80 GB
 - e. 100 TB
3. What will be the output of the decision making constructs for the following program if the user enters 2 for num1 and 1 for num2?

```
program decision (output);  
  
begin  
  var num1 : integer;  
  var num2 : integer;  
  
  write('Enter num1: ');  
  readln(num1);  
  write('Enter num2: ');  
  readln(num2);  
  if (num1 > num2) AND ((num1 MOD 2 = 0) OR (num2 MOD 2 = 0)) then  
    write('1');  
  if (num1 > num2) AND ((num1 MOD 2 = 0) AND (num2 MOD 2 = 0)) then  
    write('2')  
  else  
    writeln('3');  
end.
```

- a. 1
- b. 12
- c. 13
- d. 23
- e. None of the above

For questions 4 & 5 you are to indicate the number of times that the loop executes.

4.

```
program loop1 (output);  
begin  
  var i : integer;  
  i := 1;  
  while (i < 4) do  
  begin  
    write(i);  
    i := i + 1;  
  end;  
end.
```

- a. 0
- b. 1
- c. 3
- d. 4
- e. None of the above

5.

```
program loop2 (output);  
begin  
  var i : integer;  
  i := 1;  
  while (i <= 4) do  
  begin  
    write(i);  
    i := i + 1;  
  end;  
end.
```

- a. 0
- b. 1
- c. 3
- d. 4
- e. None of the above

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

