**Redeemer's University, Redemption City, Nigeria**
**College of Natural Sciences**
**Department of Mathematical Sciences**
**Second Semester 2008/09 Session**
**B.Sc 100L (Computer Science) Degree Examinations**

**Course Code: CMP 102        Course Title: Introduction to Computer Programming**
**Instruction: Answer ALL Questions  in Section A and Any One in Section B**

**Time Allowed: 2½ Hours**

SECTION A

1. In Pascal, the code in a procedure is only executed when the  procedure is
       a. called b. declared c.  compiled d. interpreted

2. Find trunc(3.742)        a. 3        b. 4        c. 5        d. 6

3. To use a procedure in Pascal you need
   a. to re-declare the procedure each time you call it
   b. to declare the procedure or call it; these actions are identical
   c. to declare the procedure and call it in the body of the program
   d. only to declare it
   e. to call it in the body of the program

4. In Pascal, "assignment" of a variable is the name given to ...
   a. specifing a storage location for a variable
   b. storing a value in that variable
   c. declaring the type of a variable

5. find round(5.132) a. 6 b. 4 c. 5 d. 3

6. In Pascal, if you want the variable called "hits" to take on  values which are whole numbers (no fractional part) it should be declared as type _____ . a. integer  b. real  c. string d. character

7. In a Pascal program, if you want a program statement to be  ignored or othewise have no effect upon execution of the
   program, you can
   a. precede the statement with the word "ignore"
   b. put the statement inside double quotation marks
   c. put the statement inside single quotation marks
   d. make it into a comment by enclosing it with "{ }"

8. In computer programming, the sequence of instructions that solves a problem or task is called

   _____
     a. Flowchart  b. Algorithm  c. program  d. language

9. If you look at a computer program, and it is made up entirely of numbers, the program code you see
   is in
   a. machine language
   b. a high-level language
   c. assembly language
   d. FORTRAN

10. In computer programming, "divide and conquer" refers to
    a. a computer game
    b. decomposing problems into smaller units to be solved separately
    c. a Department of Defense battle simulation

11. In using Turbo Pascal, the program that turns your Pascal statements into an assembly program is
    called a _____.
    a. Assembler  b. interpreter  c. compiler  d. machine language

12. Which of the following is NOT true about comments in a Pascal program?
    a. they are used to help humans understand the program
    b. they help Turbo Pascal discover semantic errors in a
       program

1

c. they are used to help humans debug a program
d. they are helpful in allowing others to extend or maintain a program

13. The "case" statement is another form of what statement?

   a. while  b. repeat  c. for  d. if

14. What is the error in the following Pascal code? (Assume inning is declared as integer)

```
if inning >= 8 then
  begin
    WriteLn('Game may be about over!');
    WriteLn('Unless score is close')
  end;
else
  WriteLn('Buy some more popcorn');
```

   a. There should be no semicolon after the second "WriteLn"
   b. There is no error.
   c. There should be no semicolon after the "end"
   d. There should be no semicolon after the first WriteLn
   e. There should be a colon between "inning" and ">"

15. In programing, when your program compiles and runs, but does not implement the algorithm that you meant it to, you have (one or more) _____ errors.

   a. syntax  b. compilation  c. design  d. semantics

16. In Pascal, "initializing" a variable means

   a. declaring the type of a variable
   b. providing the variable with an initial value
   c. defining the procedures that can use the variable

17. In a Pascal program, what will be the value of the variable "ServiceOn" immediately after executing the following code?

```
Program Waterservice;
var gallons, maxgallons:real; ServiceOn: boolean;
  .
  .
  .
maxgallons :=10000;
gallons:= 11500;
if (gallons >= maxgallons) then ServiceOn:=false
else ServiceOn=true;"
  .
```

   a. true  b. false  c. yes  d. no

18. In Pascal, what is the error in the following procedure declaration?

```
Procedure End (key : char);   {Lets user know that the keyboard}
                   {input has ended}
  begin
    if key = 'q' the Writeln ('You have finished entering data')
  end; { of procedure}"
```

   a. There is a missing semicolon after the word "begin"
   b. You cannot use an "if" statement in a Procedure
   c. The "if" statement is missing the "else"
   d. End is a reserved word in Pascal, and cannot be the name of a procedure

19. In Pascal, if you want the variable called "batting_average" to assume values to parts in one thousand (e.g. 0.409) then it should be declared as type _____.

   a. batting_average:5:1  b. batting_average:4:3  c. batting_average:3:3  d. batting_average:5:3

20. In Pascal, the declaration of a variable tells the compiler the variable's
    a. name and initial value b.type and actual value
    c. name only d. name and type

21. In Pascal, if you want the variable called "won" to be either true or false, it should be declared as type _____ .
    a. integer b. Boolean c. real d. string

22. If the variables Sum, A, B, and C are all boolean, and if the values for them are A:=True, B:=False, C:=True, what is the value of Sum after the following statement?
    Sum:=(A and B and C) or ((A and (not B) and (not C))
    or (((not A) and B and (not C)) or ((not A) and (not B) and C))):
    a. false b. no c. true d. yes

23. Find pred(E) a. f b. F c. d d. D

24. In a Pascal program, with buyflag declared boolean, and price, bluebookprice, and maxprice declared real, and for price, bluebookprice and maxprice having values respectively 3500, 3300, and 4000, what will be the value of buyflag after the following code is executed?
    buyflag := TRUE;
    If (price > bluebookprice) OR (price > maxprice)
    then buyflag := FALSE;
    a. yes b. true c. no d. false

25. In Pascal programming, stepwise refinement is implemented by programming in manageable units called _____
    a. compiler b. modules c. program d. code

26. In Pascal, the construction "If ... then ... else" is considered to be
    a. multiple statements b. five statements c. three statements d. a single statement
    e. two statements

27. In Pascal, the main program must be enclosed by a _____ and an _____
    a. start,stop b. begin,end. c. start,stop. d. begin,end

28. In Pascal, the characteristic(s) of the for loop that distinguish it from either the repeat loop or the while loop is (are)
    i the "for" loop tests at the beginning of the loop
    ii the "for" loop automatically increments the counter variable
    iii the "for" loop allows the programmer to directly specify the number of times the loop is to be executed.
    iv the test portion of the "for" can contain either AND or OR, but not both
    a. i and ii b.ii and iv c.ii only d.ii and iii e.i and iii

How many times will the following loops execute? Assume count is an integer)

29. for count := 0 to 6 do
        writeln('hello');
    a. 3 b. 4 c. 6 d. 7

30.     count := 0;
        while count >= 0 do
            begin
                count := count - 2;
                writeln('hello');
            end;
        a. 1 b. 2 c. 3 d. 4

31.     count := 1;
        repeat
            DrawCircle(count,count+5);
            count := count+1;
        until count >= 3;
        a. 1 b. 2 c. 3 d. 4

3

32.  count := 0;
                while count < 5 do
          begin
             DrawCircle(count, count+1);
             count := count + 1;
          end;
      a. 2  b. 3  c. 4  d. 5
33.  count :=0;
          repeat
          begin
             DrawCircle(count, count+1);
             count := count - 1;
          end;
        until count < 0;
     a.  1  b. 2  c. 3  d. 4

The following variables and their assigned values are to be used in answering questions 34 through 36:
    Var
      Sum, I, J :Integer ;
    Begin
      Sum := 25 ;
      I := 10 ;
      J := 5 ;
      . . .
    End.

34. The statement
        if Sum < 25 then
           WriteLn ('Madonna ')
        else
          if (I > 0) and (J > 0) then
             WriteLn ('is a famous ')
          else WriteLn ('star.');
        prints what when executed as part of a program?
        (a) Madonna
        (b) is a famous
        (c) star.
        (d) Madonna is a famous star.
        (e) An error message because the statement contains an improper semicolon.

35. The statement
        if (J + I < Sum) and (J * I < Sum) then
           WriteLn ('Hello!')
        else
          if (Sum = 25) or (I + J = 15) then
             WriteLn ('Goodbye!')
          else WriteLn ('Hello and Goodbye!');
        prints what when executed as part of a program?
        (a) Hello!
        (b) Goodbye!
        (c) Hello and Goodbye!
        (d) An error message because the statement contains an improper semicolon.
        (e) Nothing will be printed by the statement shown above.

36. The statement
```
if (Sum * J < 50) or (I > J) then
  begin
    WriteLn ('Apples');
    WriteLn ('are better than')
  end
else WriteLn ('Oranges');
```
prints what when executed as part of a program?
  (a) Apples
     are better than
     Oranges
  (b) Apples
  (c) Oranges
  (d) Apples
     are better than
  (e) An error message because the statement is missing a semicolon.

37. A major difference between a while loop and a repeat...until loop is:
   (a) a repeat...until loop will always execute at least once and a while loop may not execute at all.
   (b) a repeat...until loop may not execute at all and a while loop will always execute at least once.
   (c) a repeat...until loop requires a begin - end pair and a while loop does not.
   (d) a repeat...until loop is better suited than a while loop for producing loops that will execute
   many times. (e) There is no major difference between a repeat..until loop and while loop.

38. A misspelled keyword in Pascal is an example of a _____ error?
   (a) Boolean (b) run-time (c) looping (d) syntax (e) logic

39. Which of the following is not a Boolean operator? (a) >= (b) [ (c) = (d) <> (e) not

40. What is the maximum number of characters that can be assigned to a variable declared to be of type
Char? (a) 0          (b) 1     (c) 10     (d) Any number less than 127. (e) Any number less than MaxInt.

Questions 41 through 46 are based upon the following declaration:
   Var I, J :Integer;R :Real;C :Char;
   What will each of the following loops print when executed as part of a program?

41. for I := 1 to 3 do;
   WriteLn ('*');
      (a) *
          *
          *
      (b) ***
      (c) ***
          ***
          ***
      (d) *
      (e) Nothing will be printed because the loop causes an error.

42. for R := 10 downto 5 do
   Write (R, ' ');
      (a) 10 9 8 7 6 5 (b) 5 6 7 8 9 10 (c) 4 (d) An error message because this is an illegal statement.
      (e) An infinite loop will result.

43. R := 30.0;
      while R > 30.0 do
        begin
          Write ('HELLO ')
        end;  { while }
   (a) HELLO (b) HELLO HELLO HELLO (c) Nothing will be printed.
   (d) An error message because this is an illegal statement.(e) An infinite loop will result.

5

44. R := 30.0;
         while R <= 30.0 do
           begin
             WriteLn ('HI THERE ');
             R := R - 10.0
           end; { while }
       (a) HI THERE
       (b) HI THERE
          HI THERE
          HI THERE
       (c) Nothing will be printed.
       (d) An error message because this is an illegal statement.
       (e) An infinite loop will result.

45. R := 0.0;
         for I := 6 to 8 do
           for J := 1 to 2 do
             R := R + 2.0;
           WriteLn (R:4:1);
       (a) 2.0 (b) 4.0 (c) 12.0 (d) An error because it is illegal to place a for loop within another for loop.
       (e) An error because the statements are missing a semicolon.

46. for I := 10 to 5 do
       WriteLn (I,' ');
       (a) 10 9 8 7 6 5 (b) 5 6 7 8 9 10 (c) 5 (d) Nothing will be printed by this loop.
       (e) An error because this statement is missing a semicolon.

47. If Ch is declared as a character (char) variable, the statements
         Ch := '5' + '5';
         WriteLn (Ch:2);
       print what when executed as part of a program?
       (a) 10  (b) 55  (c) 5 + 5  (d) An error because formatting may not be used when printing character
       variables. (e) An error because it is illegal to add '5' and '5'.
48. Pascal was named after a ____ a. Computer scientist b. Mathematician  c. physicist d. Chemist
49. Find the succ( 14)  a. 16  b. 13  c. 15  d. 17
50. Consider the code segment involving X, an integer variable:
         repeat
           X := X + 3;
           until X = 30;
       How many times will the repeat..until loop be executed if the initial value of X is 15?
       (a) 0  (b) 1  (c) 3  (d) 5  (e) an infinite number of times