1. A data type has
   a. operations and values
2. Which of the following are valid ways to pass parameters?
   a. Pass by value and Reference
3. A function that returns a value and has no side effects can easily be used in what structure?
   a. Expression
4. Which of the following language feature do NOT come under CONTROL?
   a. Branching
5. The symbol table is maintained where?
   a. Environment
6. When a block or procedure is executing, it is said to be?
   a. Activated
7. What user level feature did FORTRAN not support?
   a. Recursion
8. The Haskell language was named how?
   a. For a person
9. For a semantic point of view, a procedure is a block
   a. Whose declaration is separated from its execution
10. The LISP language stands for what?
    a. None of the above
11. The argument to an operator is called.
    a. Operand
12. A block that is being activated is called.
    a. An activation records
13. The collection of data needed to maintain a single execution of a procedure is what?
    a. Activation record
14. Replacing formal parameters with the contents of the actual parameters is called what?
    a. Pass by name
15. When two expressions that have the same value in the same scope it is an example of what?
    a. Referential Transparency

16. The process a translator goes through to determine whether type information in a program is consistent is what?
    a. Type checking
17. The process of attaching types to expressions is what?
    a. Type interference
18. The rules for determining if two types are the same is what?
    a. Type equivalence
19. There are some for loops that cannot be replaced with recursion
    a. False
20. In a strongly typed language, all types errors must be caught before runtime.
    a. True
21. Closures refers to a closing brace
    a. True
22. Loops are the only form of control statements
    a. False
23. Functions are essentially named blocks of code
    a. True
24. There are no differences between functions and procedures.
    a. False
25. Reverse Polish notion implementation require the use of heap
    a. False
26. Operators and functions are equivalent concepts
    a. True
27. Order of evaluation is no important in short circuit evaluation
    a. False
28. Guarded IF's introduce nondeterminism into programming
    a. True
29. Side effects are not possible when using pass by value
    a. True
30. GOTO is no longer consider as harmful
    a. True

31. In one of the labs, you had to count the depth of blocks of code while recognizing or ignoring when a begin/end block symbol appeared in quotes or comments.
    a. Discuss how you would expand on this into recognizing even more elements of the grammarlike keywords like 'if', 'while', or multi-line comments.
    b. Is this scanning or parsing or a combination of both? Explain
32. Compare and contrast Pass by value with Pass by reference
33. All semester we have discussed the connection between programming languages and the halting problem.
    a. Explain why compiler writers should understand the halting problem
    b. What is it about the halting problem that is so important?
34. Discuss in detail three ways programming languages use the power of abstraction in making features available to the programmer?
35. Assuming memory can be allocated on the stack quicker that it can be allocated on the heap, we can conclude that the stack must be safer.
    a. False
36. The following code causes the Halting problem:

```
While (true)
{
        System.out.println("Hello World");
}
```

    a. True
37. During the lecture we discussed that memory located in the stack area is allocated _Dynamically__ by the __Program__
38.