Practical Notes

1. How characters are represented using the ASCII character set
   → Each character is assigned an unique value
   → Using 7 bits

2. Functions can return values, Procedures cannot

3. Declaring a procedure
   PROCEDURE Module_2B (BYVALUE ParX: Real, BYREF Par2: STRING)

4. Context sensitive prompt
   → IDE displays hints, appropriate to the current cursor position.

5. Program development cycle
   → Designing / Analysis
   → Coding
   → Testing
   → Maintenance.

6. Testing the program before all the subroutines have been implemented is called → Stub testing.

7. Types of maintenance
   → Corrective maintenance
      → correcting identified errors
   → Adaptive maintenance
      → amending a program to enhance functionality
      → or in response to specific changes
   → Perfective maintenance
      → modifying program to improve performance

8. The end-of-file [EOF] marker.

```
OPEN FILE "Test.txt" FOR READ
WHILE NOT EOF ("Test.txt") DO
        READ FILE "Test.txt", TextofTest
        OUTPUT TextofTest
ENDWHILE
CLOSEFILE "Test.txt"
```

9. Structure Chart → a graphical representation of the modular structure of a solution.

10. Parameter → A value passed between values.

11. Finite state machine → a machine that consists of a fixed set of possible states with a set of inputs that change the state and a set of possible outputs.

12. State transition table → a table that gives information about the states of an FSM.

13. State transition diagram → a diagram that describes the behaviour of an FSM.

14. Syntax Error → an error in which a program statement does not follow the rules of the language.

15. Logic error → an error in the logic of the solution that causes it not to behave as intended.

16. Test data → carefully chosen values that will test a program.

17. Black box testing
→ Comparing expected results with actual results when a program is run.

18. White box testing
→ Testing every path through the program code.

19. Dry run
→ The process of checking the execution of an algorithm or program by recording variable values

20. Integration Testing
→ individually tested modules are joined into one program and tested to ensure modules interact correctly.

21. Abstraction → Filtering out unnecessary data to solve a problem.
22. Decomposition → breaking problems into sub-problems, leads to modules.
23. Data modelling → analysing and organising data.
24. Pattern recognition → looking for patterns or common solutions to common problems.
25. Algorithm → a sequence of defined steps that can be carried out to perform a task.
26. Identifier table → listing variable identifiers, data types, explanations.
27. Rogue value → a value used to terminate a sequence of values.

28. Stepwise Refinement
→ Breaking down the steps of an outline solution into smaller steps.

29. Linear Search → Checking each element of an array for a required value

30. Bubble sort → method where adjacent pairs of values are compared and swapped.

31. Abstract data type → a collection of data with associated operations

32. Return Value → The value replacing the function call used in the expression.

33. Argument → The actual input expression or value with which the subroutine is being called.

34. Parameter → The variables used inside a subroutine which will take values passed into a subroutine at call time.

35. Subroutine interface → the parameters being passed between subroutine and the calling program.

36. Function/Procedure header
→ the first line of a function or procedure definition showing the identifier and parameter list.

37. By Value → the actual value is passed into the procedure

38. By Reference → the address of the variable is passed into the procedure.