1) Which of the following is a correct representation of a flowchart symbol for input/output in an algorithm?

a) Rectangle   b) Diamond   c) Oval   d) Arrow

2) In a flowchart, what does the diamond-shaped symbol represent?

a) Start/end point   b) Process or calculation

c) Decision or conditional statement   d) Input or output

3) What is the purpose of an algorithm?

a) To visually represent data

b) To solve complex mathematical equations

c) To describe a step-by-step procedure for solving a problem

d) To implement hardware components in a computer system

4) Which symbol is used to represent a loop in a flowchart?

a) Rectangle   b) Oval   **c) Diamond**   d) Parallelogram

5) Which of the following is an advantage of using a flowchart?

a) It can be executed by a computer.

b) It provides a visual representation of a process.

c) It is easier to write and understand than code.

d) It can be directly compiled and executed.

6) What is the best definition of an algorithm?

a) A computer program   **b) A step-by-step procedure to solve a problem**

c) A programming language   d) A set of data structures

7) Which of the following is NOT a characteristic of a good algorithm?

a) Unambiguous and well-defined   b) Finite set of instructions

c) Adaptable to any programming language   d) produces correct and desired output

8) What is the advantage of using an efficient algorithm?

a) It requires less memory space.

b) It can solve any type of problem.

c) It guarantees a faster execution time.

d) It eliminates the need for a programming language.

9) Which property ensures that an algorithm will eventually terminate?

a) Correctness   b) Efficiency   **c) Finiteness**   d) Optimality

10) Which of the following is true about an optimal algorithm?

a) It always produces the desired output.

b) It is the fastest algorithm for a given problem.

c) It uses the least amount of memory.

d) It is the most widely used algorithm.

11) What is the main purpose of using pseudocode in algorithm design?

a) To ensure the algorithm works correctly.

b) To make the algorithm run faster.

c) To simulate the algorithm on a computer.

d) To provide a high-level description of the algorithm.

12) What is the advantage of using an algorithm over a direct approach to problem-solving?

a) Algorithms are easier to understand.

b) Algorithms are always more efficient.

c) Algorithms can be reused for different problems.

d) Algorithms require less computational power.

13) What is a computer?

a) A physical device that performs calculations and processes data

b) A programming language

c) Software that controls hardware components

d) A storage device for data and programs

14) What is a program?

a) The physical components of a computer

b) A set of instructions that tells a computer what to do

c) A programming language

d) The operating system of a computer

14) Which of the following is NOT a programming language?

a) C++   b) Java   c) Python   **d) Windows**

15) What is the purpose of a programming language?

a) To control hardware components   b) To store data and programs

c) To create software applications and systems   d) To provide internet connectivity

16) Which of the following is a high-level programming language?

a) Assembly language   b) Machine language   **c) C**   d) Binary code

17) What is the role of a compiler in programming?

a) To execute the program   **b) To translate the program into machine code**

c) To debug the program   d) To store the program in memory

18) What is the purpose of an interpreter in programming?

a) Translate the program into machine code   b) To execute the program line by line

c) To store the program in memory   d) To debug the program

19) Which of the following is an example of a low-level programming language?

a) C++   b) Java   c) Python   **d) Assembly language**

20) What is Scratch?

a) An app development platform   b) A programming language

c) A visual programming environment   d) A mobile game

21) Which organization developed Scratch?

a) Apple Inc.   b) Google Inc.

c) Microsoft Corporation   d) **Massachusetts Institute of Technology (MIT)**

22) What is the main purpose of Scratch?

a) Web browsing   b) Mobile app development

c) **Animation and game creation**   d) Database management

23) What is a sprite in Scratch?

a) A programming block   **b) A character or object in a project**

c) A sound effect   d) A predefined function

25) Which of the following is NOT a block category in Scratch?

a) Motion   b) Control   c) Variables   **d) Database**

26) What does MIT App Inventor allow you to do?

a) Create web applications

b) Design mobile apps for iOS devices

c) Develop virtual reality games

d) Build Android apps without coding

27) What programming language is used in MIT App Inventor?

a) JavaScript   b) Python   c) Java   **d) Blockly (visual programming language)**

28) What is a component in MIT App Inventor?

a) **A visual element of an app, such as a button or textbox**

b) A data structure   c) A function or method   d) A programming concept

29) What is the purpose of the Design and Blocks Editor in MIT App Inventor?

a) To write code using a text-based editor   b) **To design the user interface of an app**

c) To test and debug the app   d) To publish the app to an app store

30) What is the advantage of using MIT App Inventor for app development?

a) It supports only Android app development.   b) It requires advanced coding skills.

c) It provides a visual and intuitive approach to app development.

d) It is a paid software with advanced features.