

Computer Science Essentials

Computer Science · Answer Key · 20 Questions

1. Which data structure follows the 'Last In, First Out' (LIFO) principle?

- A) Queue
- B) Stack**
- C) Array
- D) Linked List

2. In binary code, what is the decimal equivalent of the number 1011?

- A) 9
- B) 10
- C) 11**
- D) 13

3. Which layer of the OSI model is primarily responsible for IP addressing and routing?

- A) Physical
- B) Data Link
- C) Network**
- D) Transport

4. What does the acronym 'HTML' stand for in web development?

- A) HyperText Markup Language**
- B) High-Level Text Machine Language
- C) Hyperlink Technical Markup Language
- D) Home Tool Markup Language

5. Which of the following is considered a low-level programming language?

- A) Python
- B) Java
- C) Assembly**
- D) JavaScript

6. What is the primary function of an Operating System's kernel?

- A) Managing user interface graphics
- B) Connecting to external printers
- C) Managing hardware resources and process communication**
- D) Compiling source code into machine language

7. Which sorting algorithm has an average time complexity of $O(n \log n)$?

- A) Bubble Sort
- B) Insertion Sort
- C) Quick Sort**
- D) Selection Sort

8. In computer networking, what does a 'Ping' command measure?

- A) Download speed
- B) Packet latency or round-trip time**
- C) The physical distance to the server
- D) CPU temperature

9. Which variable type is used to store true or false values?

- A) Integer
- B) String
- C) Boolean**
- D) Float

10. What is the smallest unit of data in a computer, representing either a 0 or a 1?

- A) Byte
- B) Bit**
- C) Nibble
- D) Word

11. Which company developed the Python programming language?

- A) Microsoft
- B) Google
- C) Guido van Rossum**
- D) Oracle

12. What is the purpose of an SQL 'JOIN' clause?

- A) To delete a database table
- B) To combine rows from two or more tables based on a related column**
- C) To update data in a row
- D) To sort the results of a query

13. Which type of memory is volatile and loses its data when the power is turned off?

- A) ROM
- B) RAM**
- C) Hard Disk Drive
- D) Flash Memory

14. What is the base of the Hexadecimal numbering system?

- A) 2
- B) 8
- C) 10
- D) 16**

15. Which character signifies a comment in Python code?

- A) //
- B) /*
- C) <!--
- D) #**

16. What is the main role of a compiler?

- A) To execute code line by line
- B) To convert source code into machine code**
- C) To manage memory allocation
- D) To debug logic errors

17. Which logic gate returns true only if both inputs are true?

- A) AND**
- B) OR
- C) NOT
- D) XOR

18. What does the 'Big O' notation describe in computer science?

- A) The amount of memory used by a computer
- B) The efficiency and performance of an algorithm**
- C) The number of lines of code in a program
- D) The storage capacity of a hard drive

19. Which protocol is primarily used for securely transferring files over the internet?

- A) HTTP
- B) FTP
- C) SFTP**
- D) SMTP

20. What is the primary function of a CPU's ALU?

- A) Control memory access
- B) Perform arithmetic and logical operations**
- C) Manage graphical output
- D) Communicate with input devices