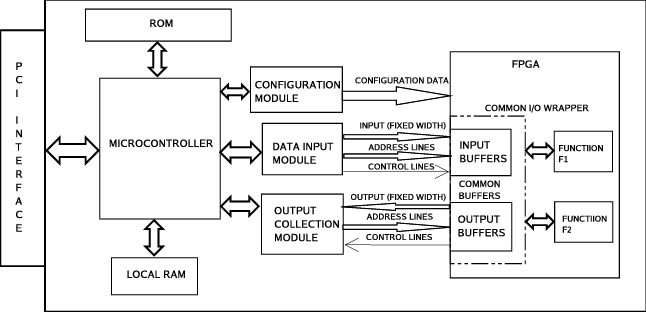
**153689-ZARIAN ACHIENG’**

**MICROPROCESSERS QUIZ**

1. On which model is based the basic architecture of a digital computer?  
   **ANS - Von Neumann model – It’s the base for digital computers where program and data are stored together**.
2. What is meant by distributed processing?  
   **ANS - When many computers work together on one task.**
3. When was the first microprocessor developed?  
   **ANS - 1971 – The first microprocessor, Intel 4004.**
4. What is a microprocessor?  
   **ANS - It’s the brain of the computer that processes all instructions.**
5. What is the technology used in microprocessors?  
   **ANS - Integrated Circuit (IC) technology – Small electronic circuits put on a chip.**
6. What are the three main units of a digital computer?  
   **ANS - ALU (Arithmetic Logic Unit), CU (Control Unit), and Memory Unit.**
7. How does the microprocessor communicate with the memory and input/output devices?  
   **ANS - Using buses – data bus, address bus, and control bus.**
8. What are the different jobs that the CPU is expected to do at any given point of time?  
   **ANS - Fetch instructions, decode them, execute operations, and store results.**
9. What is a mnemonic?  
   **ANS - A short word used instead of binary code (like ADD for addition).**
10. What is machine language programming?  
    **ANS - Programming using binary codes (0s and 1s) that a processor directly understands.**
11. What is meant by assembly language programming?  
    **ANS - Programming using mnemonics instead of binary.**
12. What are meant by low level and high level languages?  
    **ANS - Low level = close to hardware (like assembly); High level = easy to understand (like Python or C).**
13. What is meant by ‘word length’ of a computer?  
    **ANS - The number of bits a processor handles at once (like 8-bit, 16-bit).**
14. What is meant by instruction?  
    **ANS - A command given to the CPU.**
15. How many different instructions are supported?  
    **ANS - Depends on the processor – some support hundreds of instructions.**
16. What does an instruction consist of?  
    **ANS - Opcode + Operand – the action and the data/location it works on.**
17. Give one example each of the different types of instructions.  
    **ANS - Data move: MOV A, B; Arithmetic: ADD A, B; Logical: AND A, B; Branch: JMP address.**
18. What language does a microprocessor understand?  
    **ANS - Binary (Machine language).**
19. How are mnemonics written in assembly language translated into binary?  
    **ANS - By matching each mnemonic with its binary code using an assembler.**
20. How does an assembler translate programs written in mnemonic form to binary?  
    **ANS - It converts each mnemonic and operand into its machine code equivalent.**
21. What are the types of mnemonics possible?  
    **ANS - Data transfer, arithmetic, logical, branch, and control mnemonics.**
22. What are source codes and object codes?  
    **ANS - Source code – original code written by the programmer; Object code – translated machine language version.**
23. How are high level languages converted into binary?  
    **ANS - Using a compiler or interpreter.**
24. What is a ‘statement’?  
    **ANS - A line of code that does one task in a program.**
25. Write down the difference between a compiler and an interpreter.  
    **ANS - Compiler: Translates the whole program at once. Interpreter: Translates and runs line by line.**
26. Differentiate between a compiler/interpreter and an assembler.  
    **ANS - Compiler/Interpreter: Used for high-level languages. Assembler: Used for assembly language.**
27. What are the names given to instructions written in high and low level languages?  
    **ANS - High level: statements; Low level: instructions**.
28. What is another name of a microprocessor?  
    **ANS - CPU (Central Processing Unit).**
29. What is a microcomputer?  
    **ANS - A small computer that uses a microprocessor as its CPU.**
30. What are the jobs that a microcomputer is capable of doing? How does it do the jobs?  
    **ANS - Stores, processes, and outputs data using hardware (CPU, memory, I/O) and software (programs).**
31. What is a bus?  
    **ANS - A path for data to travel between parts of the computer.**
32. What are the different buses and what jobs do they do in a microprocessor?  
    **ANS - Data bus (moves data), Address bus (shows where data goes), Control bus (manages signals).**
33. Why are the different buses buffered?  
    **ANS - To protect the CPU and ensure clear, strong signals.**
34. In how many ways are computers divided?  
    **ANS - By size: Micro, Mini, Mainframe, Supercomputer**.
35. Distinguish between the three types of computers.  
    **ANS - Micro: for personal use; Mini: for small businesses; Mainframe: for large enterprises; Supercomputer: for complex calculations.**
36. In how many ways are computer softwares categorised?  
    **ANS - Two: System software and Application software.**
37. Explain the two types of softwares.  
    **ANS - System software runs the computer (like OS); Application software lets users do work (like Word or games).**
38. Draw the software hierarchy of a microcomputer system.  
    **ANS - [User Applications > Application Software > Operating System > Hardware]**
39. What is an editor?  
    **ANS - A tool used to write and modify code.**
40. What is an OS (operating system) and what are its functions?  
    **ANS - Controls the whole computer; manages files, memory, hardware, and software.**
41. What are the different types of assemblers used?  
    **ANS - One-pass and two-pass assemblers.**
42. What is a linker?  
    **ANS - Joins different parts of a program into one executable.**
43. What is a locator?  
    **ANS - Tells where in memory a program should be loaded.**
44. What are the different assembly languages used for 8085 microprocessor?  
    **ANS - Uses mnemonics like MOV, MVI, ADD, SUB, JMP, etc.**
45. What is a coprocessor?  
    **ANS - A helper chip that works with the CPU to handle specific tasks like math operations.**
46. Draw a typical coprocessor configuration and discuss the same.

  
**ANS - The coprocessor works alongside the CPU to boost performance.**

1. What is a coprocessor trap?  
   **ANS - An alert or interrupt when the CPU gives a task to the coprocessor.**
2. Explain the three fields contained in a coprocessor instruction.  
   **ANS - Operation code, Operand, Address.**
3. What is a debugger?  
   **ANS - A tool to find and fix mistakes in a program.**
4. How does a debugger help in debugging a program?  
   **ANS - Lets you run code step by step, inspect variables, and see where errors occur.**
5. What is meant by the term ‘word’?  
   **ANS - A fixed-sized group of bits processed by a computer (e.g., 8-bit word).**
6. What is meant by the term ‘long word’?  
   **ANS - A group of bits longer than a standard word (e.g., 32-bit, 64-bit**).
7. Distinguish between KB, MB, GB, TB and PB.  
   **ANS - KB = 1,024 bytes; MB = 1,024 KB; GB = 1,024 MB; TB = 1,024 GB; PB = 1,024 TB.**
8. Compare signed magnitude number and complementary numbers.  
   **ANS - Signed magnitude uses a sign bit; Complementary uses math rules to show negatives**.
9. What is meant by normalising a number?  
   **ANS - Making a number follow a standard format (especially in floating point).**
10. Name the different parts of a normalised number.  
    **ANS - Sign, exponent, and mantissa.**
11. Discuss the utility of floating point numbers.  
    **ANS - Useful for very big or very small numbers in scientific calculations.**
12. Discuss speed, size and accuracy while handling floating point numbers.  
    **ANS - Slower than integers, use more memory, but provide higher accuracy.**
13. Explain single and double precision.  
    **ANS - Single: uses 32 bits; Double: uses 64 bits – more accurate.**
14. List the different generation languages.  
    **ANS – 1st Gen – Machine**

**2nd Gen – Assembly**

**3rd Gen – High-level (C, BASIC)**

**4th Gen – Very high-level (SQL)**

**5th Gen – AI languages (Prolog, LISP).**