Riphah International University, Lahore Campus, Pakistan
Riphah School of Computing & Innovation
Computer Organization and Assembly Language – Fall 2024
Assignment # 1
Course Instructor: Engr. Amna Bibi (Lecturer CS)

Submission Deadline	Wednesday, November 6, 2024, 4:00pm	Total Marks	40
Instructions	• You must have to submit a Google Doc/Microsoft Word file. Each question carries 5 marks. • The assignment should be Individual. • The solution should be more graphical and illustration-based where required. • Write description in bullets, don't add any long paragraphs. • The document should be well-structured and in a presentable formatting. • The solution file in MS Word is attached, follow its formatting. • Take help from book material where required.	CLO Linked	1,5

Course Learning Outcomes
At the end of this course, students will be able to:

No.	Outcome	Relation with PLO	BT Level
CLO1.	**Identify** the function units of computer architecture, different computer architecture	PLO1	C4
CLO2.	**Differentiate** the various instructions types, different secondary storage devices and addressing modes used for programming	PLO2	C3
CLO3.	**Infer** the interrupts and direct memory access the standard I/O interfaces.	PLO2	C2
CLO4.	**Illustrate** the design of a pipelined CPU and cache hierarchy, the need for data path & control.	PLO3	C4
CLO5.	**Interpret** between RAM, ROM, speed, cost, size, cache & virtual memory and need for improving cache performance.	PLO5	C3

Mapping of Questions with CLOs

Questions	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
CLO #	1	1	1	1	5	1	1	1
Marks Obtained								

1. Explain the stored-program concept introduced in the IAS computer. Why was it a groundbreaking development in computer history?

2. Compare and contrast the characteristics of vacuum tubes and transistors. How did the invention of transistors improve computer design?   {Write in table}

3. Define microelectronics and explain its role in the development of the third generation of computers.

4. Discuss Moore's Law and its implications for computer performance and cost.

5. Explain the transition from magnetic-core memory to semiconductor memory. What advantages did semiconductor memory offer?

6. Explain the importance of bus width, clock speeds, and feature size in microprocessor evolution. How do these factors influence computer performance?

7. Discuss the pros and cons of classifying computers into generations. Why might this classification become less meaningful over time?

8. Describe the impact of each generation of computers on society and industry. How did each generation change the way computers were used?   {Should be well-written, graphical way}