Subject code: PC234EC Semester: 2nd

Subject name: Computer Organisation & Architecture ACY: 2020-2021

Assignment Questions

1. Explain the concept of computer generations and how computer architecture has evolved over time. [CO1]
2. Discuss the importance of fixed-point representation of numbers in computer systems. Provide examples to illustrate its use. [CO1]
3. Define digital arithmetic algorithms and elaborate on the applications of Booth's algorithm in the context of multiplication. [CO1]
4. Define instruction codes and explain their role in computer systems. How do they contribute to the execution of instructions? [CO2]
5. Discuss the concept of stored program organization in computers. How does it facilitate the execution of programs in a computer system? [CO2]
6. Explain the common bus system in the context of computer architecture. What advantages does a common bus system offer in terms of data transfer? [CO2]
7. Explain the concept of general register organization in computer architecture. How does it enhance the efficiency of data manipulation in a CPU? [CO3]
8. Discuss the features of CISC (Complex Instruction Set Computing) and RISC (Reduced Instruction Set Computing) architectures. Provide a comparison of their characteristics and advantages. [CO3]
9. Describe the different instruction formats used in computer systems. How do instruction formats contribute to efficient data transfer and manipulation? [CO3]
10. Define the I/O interface and its significance in computer systems. How does it facilitate communication between the CPU and external devices? [CO4]
11. Compare and contrast the I/O bus with the memory bus. Highlight the key differences in their structures and functionalities. [CO4]
12. Explain the principles of asynchronous data transfer, including strobe control and handshaking. How do these mechanisms ensure reliable communication between devices? [CO4]
13. Define memory hierarchy and explain its significance in computer systems. How does the memory hierarchy contribute to efficient data storage and retrieval? [CO5]
14. Discuss the concepts of primary memory and auxiliary memory. What are their respective roles in the overall memory hierarchy of a computer system? [CO5]
15. Explore cache memory and its mapping functions. How do cache mapping techniques optimize data access and improve system performance in a memory hierarchy? [CO5]