Subject code: PC505EC Semester: 1st

Subject name: Computer Organization & Architecture ACY: 2019-2020

Assignment Questions

1. Show the step-by-step multiplication process using Booth algorithm, when the following binary numbers are multiplied. Assume 5-bit registers that hold signed numbers. (+ 1 1) X ( -1 7)
2. Explain with an example restoring division algorithm.
3. Explain about fixed-point representation with an example.
4. Explain address sequencing process of microprogramed control unit with suitable block diagram.
5. Explain with the help of flow diagram how an instruct ion is fetched, decoded and executed?
6. Draw and explain the instruction cycle and the control functions associated with each of the phases. Show the execute phase for any one memory reference instruction.
7. Draw a space-time diagram for a six-segment pipeline showing the time it takes to process eight tasks?
8. A non-pipeline system takes 50ns to process a task. The same task can be processed in a six-segment pipeline with a clock cycle of 10 ns. Determine the speedup ratio of the pipeline for 100 tasks. What is the maximum speedup that can be achieved?
9. Describe one address, two address instruction formats with the help of examples. Discuss register direct, register indirect and indexed addressing modes along with their merits & demerits?
10. Write short notes on Isolated Vs memory mapped I/O.
11. What is daisy chaining? Explain with neat sketch.
12. What are the functions of the standard I/O interface? Explain.
13. Discuss the mapping process in context with memory management. Also explain each type of mapping process with suitable diagram?
14. What are the various techniques for data transformation from main memory to Cache memory?
15. Explain briefly about Associate-mapped and set-associate mapped cache.