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) [CO1]
2. Explain with an example restoring division algorithm. [CO1]
3. Explain about fixed-point representation with an example. [CO1]
4. Explain address sequencing process of microprogramed control unit with suitable block diagram. [CO2]
5. Explain with the help of flow diagram how an instruct ion is fetched, decoded and executed? [CO2]
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. [CO2]
7. Draw a space-time diagram for a six-segment pipeline showing the time it takes to process eight tasks? [CO3]
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? [CO3]
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? [CO3]
10. Write short notes on Isolated Vs memory mapped I/O. [CO4]
11. What is daisy chaining? Explain with neat sketch. [CO4]
12. What are the functions of the standard I/O interface? Explain. [CO4]
13. Discuss the mapping process in context with memory management. Also explain each type of mapping process with suitable diagram? [CO5]
14. What are the various techniques for data transformation from main memory to Cache memory? [CO5]
15. Explain briefly about Associate-mapped and set-associate mapped cache. [CO5]