Questions bank of embedded system:

1. Differentiate between general purpose computing system and embedded system.
2. What is an embedded system? Explain the different applications of embedded systems.
3. What are the common characteristics of embedded system?
4. Prove that, Digital camera is a good example of embedded systems.
5. Classify embedded system based on generation.
6. Classify embedded system based on complexity and performance.
7. Write the major application of embedded system.
8. What are the purpose of develop embedded system?
9. What is non recurring engineering cost? How it role-plays in embedded system?
10. How can you optimize single purpose processor? State briefly.
11. How can you optimize the original program in single purpose processor? Explain with example.
12. Differentiate between sequential and combinational circuit.
13. How can you optimize the FSMD in single purpose processor? Explain with example.
14. How can you optimize the datapath in single purpose processor? Explain with example.
15. How can you optimize the FSM in single purpose processor? Explain with example.
16. Explain the controller and datapath with example.
17. Describe resister transistor (RT) level single purpose processor design.
18. What is the difference between a synchronous and an asynchronous circuit?
19. Design a single-purpose processor that outputs Fibonacci numbers up to n places. Start with a function computing the desired the result, translate into a state diagram, and sketch a probable datapaath.
20. What is the purpose of the datpath? of the controller?
21. Determine whether the following are synchronous or asynchronous circuit?
22. Describe the basic structure of processor. Why general purpose software design?
23. Explain the datapath operation with figure.
24. How control unit function in processor?
25. Explain control unit sub operation according to software design aspect.
26. Draw instruction cycles of processors for each step.
27. What are the differences between datapath and control unit? Explain the datapath operation and instruction cycles.
28. What is pipelining? How can you increase instruction throughput?
29. What are the facts in software design programmer considered?
30. What are the software development procedures in software design in embedded systems?
31. How hardware description languages differ than instruction set simulator in simulation? Design ISS for simple processor.
32. How a general purpose processor is differ than application specific instruction set processors (ASIPs)? What are the common features of ASIPs for microcontroller?
33. How a general purpose processor is differ than application specific instruction set processors (ASIPs)? What are the common features of ASIPs for digital signal processors?
34. Design general purpose processor and it architecture of a simple microprocessor.
35. Classify the embedded system based on generation and explain it. How can you optimize the single-purpose processors? Explain optimizing the FSMD.
36. What is ASIPs? Explain common ASIPs.
37. How SRAM is differ than DRAM. Write DRAM operation.
38. How microcontroller is differing than microprocessor? Compare 8051 families.
39. Classify the embedded system based on complexity and performance requirement.
40. How can you optimize the single-purpose processors? Explain optimizing the original program.
41. What are the programmer considerations in an Embedded Systems?
42. What are the factors to be considered in selecting a controller? Compare 8051 families.
43. Explain the write ability and storage permanence of semiconductor memory.
44. Differentiate between FPM DRAM and EDO DRAM, SDRAM and DDR DRAM.
45. Describe Mask PROM, OTP ROM, PROM, EPROM, EEPROM, Flash Memory.
46. How can you compose memory to increase number and width of words?
47. What are basic techniques for cache mapping? How direct mapping differ than fully associative mapping?
48. Explain the set associate cache mapping.
49. What are the cache replacement policies?
50. What are the cache write techniques?
51. How cache impact on system performance?
52. How SDRAM operate?
53. What are the general characteristics of Rambus DRAM? Why it is so popular than others?
54. Differentiate between SDRAM and ESDRAM.
55. What is interfacing? Explain with simple bus structures with it timing diagram.
56. What are different characteristics of strobe protocol and Handshake protocol?
57. Differentiate between memory mapped I/O and standard I/O.