UNIT - II

1. Describe the Auxiliary carry flag usage?
2. Define conditional code/ status registers in computer organization?
3. Discuss data structures that can be best supported using (a) indirect addressing mode (b) indexed addressing mode?
4. Discuss in detail instruction formats with various examples?
5. List out the different computer instruction formats?
6. Explain different types of addressing modes in branch instructions?
7. Differentiate hardwired control unit and micro programmed control unit with an example.
8. A computer has 16 registers, an ALU with 32 operations and a shifter with eight operations, all connected to a common bus i) Formulate a control word for a micro operation ii) Specify the number of bits in each field of control word and give a general encoding scheme
9. Write about the fetch routine in symbolic microinstructions.
10. List out the typical logical and bit manipulation instructions.
11. Differentiate hard wired control unit and micro programmed control unit.
12. Explain micro sequencer organization with a neat sketch.
13. Discuss the following: Computer configuration for micro program, Symbolic micro program and binary micro program.
14. What is the purpose of addressing modes? Explain various addressing mode techniques
15. Explain the basic organization of a micro programmed control unit and the generation of control signals using micro program.
16. Describe the control unit organization with a separate Encoder and Decoder functions in a hardwired control
17. What is a control word?
18. What do you mean by instruction set completeness? Explain.
19. What do you mean by content addressable memory?
20. Give an overview of address sequencing in microprogrammed control unit. Formulate a mapping procedure that provides eight consecutive microinstructions for each routing. The operation code has six bits and the control memory has 2048 words.
21. What are the basic differences among a branch instruction, a call subroutine instruction, and program interrupt?
22. What are addressing modes? Explain the various addressing modes with examples.
23. Discuss about logic micro operations.
24. Explain logical shift, circular shift and arithmetic shift micro operations.
25. Explain following instructions: (1) AND (2) BUN (3) STA (4) ISZ
26. Explain four types of instruction formats with example.
27. Explain shift micro operations and Draw neat and clean diagram for 4bit combinational circuit shifter.
28. List out address sequencing capabilities required in control memory.
29. Differentiate hardwired control and micro programmed control architecture.
30. Explain about functions of CPU

31. Explain about program control Instructions.
32. Calculate the number of times control unit refer to memory when it fetches and executes an indirect addressing mode instruction if the instruction is a computational type requiring an operand from memory?
33. Calculate the address field of an indexed addressing mode instruction to make it the same as a register indirect mode instruction?
34. List the basic differences between a branch instruction, a call subroutine instruction, and a program interrupt?
35. The memory unit of a computer has 256K words of 32 bits each. The computer has an instruction format with four fields: an operation field, a register address field, a mode field, and a memory address. Determine the instruction format and the number of bits in each field if the instruction is in one memory word?