

FACULTY OF ENGINEERING

Code No: 150706SL

BE IV-Semester (ECE) (AICTE) (Main & Backlog) Examination, October 2021

Subject: Computer Organization & Architecture

Time: 2 Hours

Max marks: 70

Missing data, if any, may be suitably assumed

PART - A

Note: Answer any five questions.

(5x2=10 Marks)

1. Show the hardware for Booth's multiplier.
2. Draw IEEE 754 formats of floating point representation.
3. What is direct and indirect address instructions.
4. What is stored program organization?
5. Distinguish between RISC & CISC processors.
6. What is the role of PC and IR registers?
7. Compare and contrast between synchronous and Asynchronous communication.
8. Explain the need for an I/O interface.
9. Distinguish between SRAM and Associative memory.
10. Explain the terms tag, index and block in relation to cache memory.

PART - B

Note: Answer any four questions.

(4x15=60 Marks)

11. (a) Draw the flow chart for signed addition/subtraction and also draw the hardware required for that.
(b) Differentiate between Restoring and Non Restoring division algorithm.
12. (a) Explain the common bus system of computers with a neat sketch.
(b) Explain various phases of an instruction cycle in detail.
13. (a) Explain possible pipeline hazards with its resolving technique.
(b) What is the basic advantage of using interrupt-initiated data transfer over transfer under program counter without an interrupt?
14. (a) Explain the operation of Daisy chaining method of priority interrupt.
(b) What are the merits and demerits of programmed I/O data transfer?
15. (a) Explain Set Associative mapping in detail.
(b) Explain the virtual memory in details.
16. (a) Describe in detail about IOP organization.
(b) Explain the Interrupt cycle with flow chart.
17. (a) Explain the design of control unit. How to decode the micro-operation fields? Explain the process.
(b) Explain Vector processing in detail.
