

--	--	--	--	--	--	--	--	--	--



## GIET UNIVERSITY, GUNUPUR - 765022

B. C. A (Second Semester) Examinations, August' 2023

### BCA20201 - Computer Architecture

Time: 3 hrs

Maximum: 70 Marks

**The figures in the right hand margin indicate marks.**

**PART – A: (Multiple Choice Questions)**

**(1 x 10 = 10 Marks)**

**Q. 1 Answer ALL questions**

	CO #	PO #
a. Which of the following is a type of computer architecture? (i) Microarchitecture (ii) Harvard Architecture (iii) Von-Neumann Architecture (iv) All of the mentioned	1	1
b. In CISC architecture most of the complex instructions are stored in ____ (i) CMOS (ii) Register <u>(iii) Transistors</u> (iv) Diodes	2	1
c. Both the CISC and RISC architectures have been developed to reduce the ____ (i) Time delay (ii) Semantic gap (iii) Cost (iv) All of the mentioned	2	2
d. The flash memory modules designed to replace the functioning of a hard disk is ____ (i)RIMM (ii)FIMM (iii)FLASH DRIVES (iv)DIMM	3	1
e. The addressing mode, where you directly specify the operand value is ____ (i) Immediate (ii) Direct (iii) Definite (iv) Relative	2	1
f. ____ addressing mode is most suitable to change the normal sequence of execution of instructions. (i) Relative (ii) Indirect (iii) Index with Offset (iv) Immediate	2	1
g. Which method/s of representation of numbers occupies a large amount of memory than others? (i) Sign-magnitude (ii) 1's complement (iii) 2's complement (iv) 1's & 2's compliment	2	1
h. When we perform subtraction on -7 and 1 the answer in 2's complement form is ____ (i)1010 (ii)1110 (iii)0110 (iv)1000	2	1
i. The register used to store the flags is called as ____ (i) Flag register (ii) Status register (iii) Test register (iv) Log register	3	1
j. When 1101 is used to divide 100010010 the remainder is ____ (i)101 (ii)11 (iii)0 (iv)1	2	2

**PART – B: (Short Answer Questions)****(2 x 10 = 20 Marks)**Q.2. Answer ALL questions

	CO #	PO #
a. What is RISC?	1	1
b. Define addressing mode?	1	1
c. What is instruction cycle?	1	2
d. Define Boolean algebra?	2	2
e. What are the universal gate in computer architecture?	2	1
f. Difference between RAM and ROM?	3	3
g. What is direct mapping?	3	1
h. What is memory interleaving?	3	2
i. What is output peripheral device?	4	1
j. What is synchronous data transfer?	3	1

**PART – C: (Long Answer Questions)****(10 x 4 = 40 Marks)**Answer ALL questions

	CO #	PO #
3.a. Difference between computer architecture and organization?	1	3
b. Explain different types of instruction format?	1	1
(OR)		
c. Explain the operational concept with the help of example.	2	3
d. Difference between instruction and execution cycle?	2	2
4.a. What are the functional units of computer architecture?	1	2
b. Differentiate between RISC and CISC?	1	3
(OR)		
c. Differentiate between data path and control path design.	2	1
d. What is Boolean algebra? Explain the different types of laws of Boolean algebra?	2	2
5.a. Explain the different type of digital logic gate with truth table?	2	2
b. Explain the design of ALU with neat diagram ?	2	2
(OR)		
c. What is cache mapping? Describe the need of direct mapping ?	3	3
d. Explain the memory hierarchy concept with block diagram.?	3	1
6.a. What is direct memory access, explain which block diagram of DMA ?	4	2
b. Define cache memory? Explain the cache performance?	3	3
(OR)		
c. Short note:- i) Virtual mapping , ii) Input/output Channel.	4	1
d. Difference between synchronous and asynchronous data transfer?	4	3

--- End of Paper ---