GIET UNIVERSITY, GUNUPUR – 765022

MCA (First Semester) Regular Examinations, January – 2024

MCA23104 - Computer System and Architecture

Time: 3 hrs Maximum: 60 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. What is Instruction Cycle?	CO1	K1
b. Define Boolean Algebra.	CO2	K2
c. What is Secondary Memory?	CO3	K1
d. What is peripheral device?	CO4	K1
e. What is parallel processing?	CO5	K1

PART – B **(10 x 5 = 50 Marks)**

Answer ***ALL*** questions	Marks	CO #	Blooms Level
2. a. Explain Instruction format? Write down the different types of instruction format.	5	CO1	K2
b. Write the difference types of addressing modes.	5	CO1	K1
(OR)			
c. Explain the design and architecture of ALU with neat diagram.	5	CO2	K2
d. Explain the working principle of Bus structure diagram.	5	CO2	K2
3.a. What is Cache memory? Write down the performance of Cache Memory .	5	CO3	K1
b. What is Cache mapping? Explain concept of Fully Associative Mapping.	5	CO3	K1
(OR)			
c. Write down different types of logical gate with truth table.	5	CO2	K1
d. Define Number system? Mention difference between signed number and unsigned number with examples.	5	CO2	K1
4.a. What is memory? Write down the working function of ALU.	5	CO3	K3
b. Explain the working principle of Virtual Mapping.	5	CO3	K1
(OR)			
c. Write down difference between Programmed I/O and memory mapped I/O.	5	CO4	K3
d. What is data transfer? Explain the concept of Asynchronous data transfer?	5	CO4	K1
5.a. Explain the Von-Neumann architecture computer with neat diagram.	5	CO1	K2
b. Differentiate between SIMD and MISD.	5	CO5	K3

(OR)

c.	What is peripheral device? Explain different types of peripheral devices.	5	CO4	K3
d.	Define DMA. Explain the concept of different modes of DMA.	5	CO4	K1
6.a.	What is parallel processing? Explain with neat diagram.	5	CO5	K1
b.	Explain the concept of Flynn's classification with neat diagram.	5	CO5	K2

(OR)

c.	Write a short note on i. Vector processing ii. Pipelining	5	CO5	K1
d.	Write a short note on i. Instruction Code ii. Instruction Set	5	CO5	K1

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