Total number of printed pages: 2 **D/3rd/DCSE301**

2024

Computer Architecture and Organization

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1.	a)	Draw the IAS (Institute for Advance Study) Structure of a computer system and then state the functions of each register available in IAS structure.	10
	b)	Discuss the various components of a computer system with suitable diagram of Top-Level View.	10
2.	a)	Discuss the key characteristics of computer memory.	5
	b)	Discuss various types of computer memory with suitable diagram of memory hierarchy.	5
	c)	What are the memory word, unit of transfer and data transfer rate.	5
	d)	Discuss the various accessing methods of computer memory.	5
3.	a)	Discuss the various types of Semiconductor Memory with different characteristics.	10
	b)	Discuss the input output subsystem of a computer system. Explain why the special communication links are needed for interfacing between the peripherals and the central processing unit.	5+5=10
4.		Discuss the following 3 ways that computer buses can be used to communicate with memory and I/O. i. Programmed I/O Mode ii. Interrupt-Initiated I/O iii. Direct Memory Access (DMA)	20
5.	a)	Discuss the Von Neumann architecture of computer system with suitable diagram.	10
	b)	i. Discuss the functionalities of DMA controller. ii. Explain briefly the DMA transfer operation.	5+5=10
6.		Write short notes on (any four)	4*5=20

i. Monitor and Printer

ii. Top-Level Structure of computer system

iii Functions of Computer System

iv Keyboard and Mouse

v Secondary memory