Program: B.Tech in Computer Engineering

Academic Year: 2022

Duration: 3 hours

Date: 05.01.2023

Time: 10:30 am to 01:30 pm

Subject: Processor Organization and Architecture (Semester V)
(PCCO502OT)

Marks: 75

Instructions:		
1) All Questions are Compulsory.		
2) All questions carry equal marks.		
3) Answer to each new question is to be started on a fresh page.		
4) Figures in the brackets on the right indicate full marks.		
5) Assume suitable data wherever required, but justify it.		
6) Draw the neat labelled diagrams, wherever necessary.		
Question No.		Max. Marks
Q1 (a)	Draw the Flowchart and Implement Restoring Division Algorithm for (11) / (3) **OR** Draw the Flowchart for Booth's Algorithm and Implement (-7 X 3)	[10]
Q1 (b)	Differentiate between Von Neumann Model and Harvard Architecture	[05]
Q2 (a)	Illustrate Cache Mapping techniques with neat Sketch.	[08]
Q2 (b)	Explain Memory Hierarchy and its characteristics.	[07]
Q3 (a)	Define Addressing Modes and Explain Different Addressing modes of 8086 microprocessor with example. **OR** Explain different pins used in 8086 micro processor with neat diagrams.	[10]
Q3 (b)	Construct an ALP to transfer a block of data from one segment to another using string instructions.	[05]
Q4 (a)	What are interrupts? list different types of interrupts in 8086 microprocessor. Explain dedicated interrupts. **OR** Write an ALP to sort the given array of 5 nos in ascending order.	[08]
Q4 (b)	Explain the 5 Stage Integer Pipeline in Pentium Processor. **OR** Explain the Branch Prediction Concept in Pentium Processor.	[07]
Q5 (a)	Sketch the Architectural Block diagram of 8051 Microcontroller and Explain different components.	[10]
Q5 (b)	List different instruction Sets of 8051 Microcontroller. Illustrate different Arithmetic instructions of 8051 Microcontroller with Example	[05]

*****All the Best*****