



Sardar Patel Institute of Technology
Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India
(Autonomous College Affiliated to University of Mumbai)

End Semester Examination (Make-up)
July - 2019

Max. Marks: 60

Class: SE

Course Code: EL43

Name of the Course: Computer Organization and Architecture

Duration: 3 Hours

Semester: IV

Branch: ETRX

Instruction:

- (1) All questions are compulsory
- (2) Draw neat diagrams
- (3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1 (A)	Calculate number of external connections required for memory of size 1024 x 8 Bytes. Also draw memory interface diagram.	04	CO4
Q.1 (B)	With help of block diagram explain DMA controller.	04	CO5
	OR		
Q.1 (B)	What are the different blocks of I/O module and what are their functions?	04	CO5
Q.1 (C)	List and explain driving factors behind design for performance	04	CO1
Q.2 (A)	What is Micro programmed Control Unit . Draw suitable diagram to support your answer.	06	CO3
Q.2 (B)	A 8 bit processor has 16 bit address lines. It has 4 KB of cache memory. The computer follows direct mapping with each cache line being of size 32 bit show memory address format and explain the process of look up with neat diagrams.	06	CO4
Q.3 (A)	Perform $(2) * (31)$ using Booth's multiplication algorithm.	06	CO2
	OR		
Q.3 (A)	Using Non Restoring division algorithm solve $(31)/(4)$.	06	CO2
Q.3 (B)	Write short note on Instruction formats and basic instruction cycle.	06	CO3
Q.4 (A)	Write short note on register architecture of ARM processor.	04	CO1
Q.4 (B)	Perform $(67)_{\text{base } 8} + (71)_{\text{base } 8}$ and write answer in form $(X)S$ ($S = \text{Base } 7$).	02	CO2
Q.4 (C)	Compare different types of Bus Arbitration Techniques.	06	CO5
	OR		
Q.4 (C)	What are different types of bus? Support your answer with suitable diagrams and/or examples.	06	CO5
Q.5 (A)	Compare and contrast Von Neuman and Harvard Architecture	06	CO1
Q.5 (B)	What are the different stages in six stage pipelining. Support your answer with suitable example and timing diagram.	06	CO6