DSY (comp.)

Nov – Dec 2024
(B. Tech / M. Tech.) Program: B. Tech.   Scheme I/II/IIB/III:
Regular Examination: SY Semester: III
Course Code: C304 and Course Name: Digital Logic & Computer Architecture
Duration: 02.5 Hours   Max. Marks: 60

Date of Exam: 16-12-24

Instructions:
(1) All questions are compulsory.
(2) Draw neat diagrams wherever applicable.
(3) Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
		10		
Q 1	Solve any **two** questions out of three: (05 marks each)		CO1	Ap
a)	Perform the following with required steps - i) Convert (340) 10 to excess-3 code. (1 mark) ii) Convert Hexadecimal to decimal: E7A9 (2 marks) iii) Convert Hexadecimal to binary : 3A9D.A0C (2 marks)		CO3	Ap
b)	Design logic circuit diagram for S-R flip-flop using NAND gates. Give its truth table and logic symbol diagram.		CO4	U
c)	Explain advantages and disadvantages of Micro-programmed control unit.			
Q 2	Solve any **two** questions out of three: (05 marks each)	10	CO1	U
a)	Write the symbol, truth table, and output expression for each of the basic and universal logic gates.		CO5	U
b)	Explain Associative Memory in Detail.		CO6	U
c)	What is bus arbitration? Explain any one techniques of bus arbitration?			
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	i) Perform the multiplication between 13 X 11 using Booth's multiplication Algorithm. ii) Draw the single and double precision format for representing floating point number using IEEE 754 standards and explain the various fields.		CO2	Ap
b)	i) Implement full adder using 8:1 Mux and Draw the Logic Diagram. ii) Explain Register Organization in detail with a neat diagram.		CO3	Ap,U
c)	i) Explain Micro operations with example. ii) Describe Architecture of Hardwired Control Unit.		CO4	U

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Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Draw and Explain the Flowchart for the Restoring Algorithm and Find 15 divided by 4 using Restoring Division Algorithm For Unsigned Integer.		CO2	Ap
b)	i) Explain Interleaved Memory in Detail. ii) Describe Cache coherence and write policies.		CO5	U
c)	Explain Flynn's Classification with neat diagram.		CO6	U

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