R15

Code No: 123BQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year I Semester Examinations, March - 2017
DIGITAL LOGIC DESIGN AND COMPUTER ORGANISATION
(Information Technology)

Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit.
Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

1.a)	Discuss about "Performance Measurement" of a computer.	[2]
b)	Convert the following binary numbers into its equivalent decimal. i) 0.1010 ii) 101.1101	[3]
c)	Simplify the expression using K-map. $F(X,Y,Z)= \sum m(1,2,4,7)$	[2]
d)	Design 3×8 Decoder using 2×4 Decoders.	[3]
e)	Draw the flow chart for addition of 2 fixed point binary numbers.	[2]
f)	Write short notes on "Big – endian".	[3]
g)	Write short notes on "Micro Program sequencing".	[2]
h)	Explain about Secondary storage devices in brief.	[3]
i)	Give the Advantages of Interrupt driven I/O.	[2]
j)	List out the functions of I/O Interface.	[3]

PART-B

(50 Marks)

2.a)	Explain in detail about bus structures.	
b)	Differentiate between multiprocessor and multi computers.	[5+5]
	OR	
3.a)	Convert $8620_{(10)}$ into i) BCD ii) Excess-3 iii) 2421 iv) Binary.	
b)	Explain about Signed binary numbers in detail.	[5+5]
4.a)	Realize 2 input XOR gate using only NAND gates.	
b)	Explain about JK Flip-Flop with a neat diagram.	[5+5]
	OR	
5.	Explain about Universal Shift Register with a neat diagram.	[10]
6.	Explain Booth's multiplication algorithm in detail.	[10]
	OR	
7.	List IA-32 Processors. Explain the register structure of IA-32 Pentium processor.	[10]

8.a) Distinguish between microprogrammed control and hardwired control.
b) Explain how data transfer takes place between memory and a processor. [5+5]

OR

9.a) Explain in detail RAM and ROM chips.
b) Define Virtual memory and explain its memory organization. [5+5]

10. Explain in detail about USB architecture. [10]

OR

11. Explain about DMA controller in detail with a neat diagram. [10]

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