

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. [3]
i) 0.1010 ii) 101.1101
- c) Simplify the expression using K-map. [2]
 $F(X,Y,Z) = \sum m(1,2,4,7)$
- 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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