

R09

Code No: 09A31202

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD

B.Tech II Year I Semester Examinations, May/June-2013

Digital Logic Design and Computer Organization

(Information Technology)

Time: 3 hours

Max. Marks: 75

**Answer any five questions
All questions carry equal marks**

- 1.a) Discuss in detail about various generations of computer.
b) Convert the following numbers with the indicated bases to decimal:
i) $(12121)_3$ ii) $(198)_{12}$ iii) $(4310)_5$ iv) $(50)_7$ [7+8]
- 2.a) Perform the subtraction with the following unsigned binary numbers by taking the 2's complement of the subtrahend.
i) $11010-10000$ ii) $11010-1101$ iii) $100-110000$
iv) $1010100-1010100$
b) What is a flip-flop, discuss about different flip-flops. [8+7]
- 3.a) Using a shift register with parallel load, explain how to convert serial input data to parallel output and parallel input data to serial output.
b) Construct a 5-to-32 line decoder with four 3-to-8 line decoders with enable and one 2-to-4 line decoder. [7+8]
- 4.a) Explain Booths multiplication algorithm with an example.
b) Discuss briefly about BCD adder. [8+7]
- 5.a) Explain about the addressing modes present in IA-32 Pentium processor.
b) Which of the following ARM instructions would cause the assembler to issue a syntax error message? Why?
i) ADD R2,R2,R2
ii) SUB R0, R1, [R2, #4]
iii) MOV R0, #257 [8+7]
- 6.a) Write a control sequence for execution of the instruction Add (R2), R1.
b) Explain about multiple bus organization. [7+8]
- 7.a) Discuss about synchronous DRAM'S
b) In many computers the cache block size is in the range of 32 to 128 bytes. What would be the main advantages and disadvantages of making the size of cache blocks larger or smaller? [7+8]
- 8.a) Explain PCI with a neat sketch.
b) Write about USB protocols. [8+7]

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