Code No: 54056 **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD
B.Tech II Year II Semester Examinations, December-2014/January-2015
COMPUTER ORGANIZATION
(Computer Science and Engineering)

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

Answer any five questions
All questions carry equal marks

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1.a) Explain the functional block diagram of a computer.
b) A 36-bit floating point binary number has eight bits plus sign for exponent and 26 bits plus sign for the mantisa. The mantisa is a normalized fraction. Numbers in the mantisa and exponent are in signed-magnitude representation. What are the largest and smallest positive quantities that can be represented, excluding zero?

2.a) Explain register transfer micro operations.
b) The 8 bit registers AR, BR CR and DR initially have following values
AR = 11110010
BR = 11111111
CR = 10111001
DR = 11101010
Determine the 8-bit values in each register after execution of the following sequence of operations

AR ← AR+ BR	Add BR to AR
CR ← CR^ DR, BR← BR+1,	Add DR to CR, Increment BR
AR ← AR – CR	Subtract CR from AR

3.a) Define the following:
i) Micro operation
ii) Micro instruction
iii) Micro program
iv) Micro code.
b) Explain the difference between hardwired control and micro programmed control. Is it possible to have a hardwired control associated with a control memory?

4.a) Explain multiplication operations on floating point numbers with necessary flowchart.
b) Explain Booth algorithm for multiplication.

5. What is the cache memory? Explain different cache addressing systems in detail.

6.a) Describe I/O peripherals of a computer.
b) Explain Input-Output Processor with neat block diagram.

7.a) Describe Flynn's computer classification in detail.
b) Discuss cache synchronization in multiprocessors.

8. Briefly explain the following:
a) RISC Pipeline
b) Instruction Pipeline hazards.

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