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**[5057]-259**

**S.E. (Comp. Engg.) (Second Semester) EXAMINATION, 2016**  
**COMPUTER ORGANIZATION**  
**(2012 PATTERN)**

**Time : Two Hours**

**Maximum Marks : 50**

- N.B. :—** (i) Attempt Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6, Q. No. 7 or Q. No. 8.  
(ii) Figures to the right indicate full marks.  
(iii) Assume suitable data, if necessary.

1. (a) Using Booth's algorithm multiply the following numbers :  
Multiplicand 12, Multiplier -6.  
Verify result in decimal number system. [6]  
(b) Differentiate RISC versus CISC. [6]

*Or*

2. (a) Write short note on "IEEE Floating Point Representation". [6]  
(b) Explain the following addressing mode with one example each : [6]  
(i) Auto Increment  
(ii) Auto decrement  
(iii) Register addressing  
(iv) Direct addressing.

3. (a) Divide the following number using restoring division algorithm : [6]  
Dividend : 1100, Divisor : 11.  
(b) Draw and explain single bus organization of the CPU. [6]

P.T.O.

*Or*

4. (a) Differentiate between combinational and sequential ALU. [6]  
(b) What are the design methods of Hardwired control unit ?  
Explain any *one*. [6]
5. (a) What are page replacement algorithms ? Explain any *one* algorithm  
in detail. [7]  
(b) What is DMA ? Explain with block diagram in detail. [6]

*Or*

6. (a) Compare merits and demerits of UMA and NUMA  
architecture. [6]  
(b) What is Bus arbitration ? Explain daisy chaining and polling  
methods of bus arbitration. [7]
7. (a) Draw and explain architectural block diagram of IBM cell broadband  
Engine and list an application of it. [7]  
(b) Write a note on IA-64 architecture. [6]

*Or*

8. (a) Compare traditional superscalar architecture and IA-64  
architecture. [7]  
(b) Explain in detail NVIDIA GPU. [6]