**Code No: I5802/R16**

### M. Tech. I Semester Regular/Supple Examinations, JAN/FEB-2018
# COMPUTER ORGANIZATION AND ARCHITECTURE
### Computer Science & Engineering (58)

**Time: 3 Hours**                                                    **Max. Marks: 60**

*Answer any FIVE Questions*
*All Questions Carry Equal Marks*

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|---|---|---|---|
| 1. | a | Discuss about the error detection using parity bit code with examples | 8M |
| | b | Find 2's complement of the following | 4M |
| | | i) 10010   ii) 111000   iii) 0101010   iv) 111111 | |
| | | | |
| 2. | a | What is RTL? Explain with suitable examples? What is its significance Instructions? | 7M |
| | b | Discuss the use of following Registers | 5M |
| | | i.   MAR | |
| | | ii.  MDR | |
| | | iii. IR | |
| | | iv.  PC | |
| | | v.   AC | |
| | | | |
| 3. | a | Discuss about parallel priority interrupt | 6M |
| | b | Draw the circuit of a BCD adder / subtractor and explain its operations | 6M |
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| 4. | a | Explain Division algorithm with example. | 6M |
| | b | Compare and contrast between Asynchronous DRAM and Synchronous DRAM | 6M |
| | | | |
| 5. | a | Explain the characteristics of multiprocessors, Encoders & Decoders | 6M |
| | b | With an example explain how BCD addition is performed | 6M |
| | | | |
| 6. | a | What is an Interrupt? Explain about different types of Interrupts. | 6M |
| | b | Explain I/O Processor with a neat diagram | 6M |
| | | | |
| 7. | a | Perform the arithmetic operations $35 + 40$ and $-35 + (-40)$ with binary numbers in singed 2's complement representation and signed- magnitude representation | 6M |
| | b | Explain the operation of DMA controller with a neat diagram. | 6M |
| | | | |
| 8. | a | Explain how to access I/O devices in a system | 6M |
| | b | Multiple $(-7)_{10}$ with $(3)_{10}$ by using Booth's multiplication. Give the flow table of the multiplication | 6M |

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