

Reg. No.



Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



SEVENTH SEMESTER B.TECH (INSTRUMENTATION AND CONTROL ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2015

SUBJECT: REAL TIME EMBEDDED SYSTEM [ICE 433]

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.
- ❖ Draw diagram wherever required and label it .

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|-----|---|---|
| 1A. | With the help of a block diagram explain DSP 55x architecture | 6 |
| 1B. | Discuss in detail about IP based design in SOC? | 4 |
| 2A. | With a neat block diagram, explain the principle of operation of OMAP architecture | 7 |
| 2B. | Differentiate between SPI and I2C protocol | 3 |
| 3A. | Explain the execution of WRITE operation in SRAM with timing diagram and timing parameters | 5 |
| 3B. | Explain the execution of read operation in DRAM super cell with a diagram and brief about its timing parameters | 5 |
| 4A. | What are the different cache write policies in embedded memory organization? | 5 |
| 4B. | What is page fault? Explain how page fault can be serviced? | 5 |
| 5A. | Describe the working of inter integrated circuit communication protocol by taking a case study. | 6 |
| 5B. | If a processor has three different operating voltages, how a task will be executed in optimal voltage | 4 |
| 6A. | Explain the working of IEEE 802.11 protocol | 6 |
| 6B. | Explain the type of physical links that can be established between master and slave | 4 |