**IES COLLEGE OF TECHNOLOGY, BHOPAL**

M. Tech Assignment- 2

Advanced Mathematics (MEVD-101)

Session July 2014- Dec 2014

**Note: 1.Question should be written in plain A-4 Size Paper.**

**2. Minimum 300 Word Limit for each Question.**

**3. Assignment should be submitted in stick file.**

**Date of Assignment: 28.10.2014** **Date of Submission: 22/ 11/2014**

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|---|---|
| Q.1 | Obtain the steady state differential equation for the (M/M/1: N/ FC FS) in usual notation and solve for $p0$ and $p1$? (2008) |
| Q.2 | Explain Markov chain. Draw transition diagram and write down the properties of Markov chain ?(2012) |
| Q.3 | Let A and B be the fuzzy sets define on a universal set x<br>Prove that $\|A\| + \|B\| = \|A \cup B\| + \|A \cap B\|$ ?<br>How fuzzy tools box works ? Explain different function which MAT provide in fuzzy tool box ? (2013) |
| Q.4 | Obtain the steady state differential equation for the (M/M/1: infinity/ FC FS),? (2012) |
| Q.5 | Show that the following operations on fuzzy sets satisfy De morgan's law<br>$U\max, I\ min, C(\alpha) = (1-\alpha)$? (2009) |

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M. Tech Assignment- 2

CMOS VLSI Design (MEVD-102)

Session July 2014- Dec 2014

**Date of Assignment: 28.10.2014** **Date of Submission: 22/ 11/2014**

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|---|---|
| Q.1 | What is CMOS latch up problem? Explain latch up triggering and latch up prevention technology with suitable examples? (2013, 2011) |
| Q.2 | What do you mean by interconnects? Explain any one in detail?(2012) |
| Q.3 | Describe subsystem design process and design of full adder? (2013) |
| Q.4 | Discuss design of ALU subsystem and dynamic shift register? (2013) |
| Q.5 | Write short notes on<br>(i) Multipliers (ii) adders (iii) clock sequential circuits (2012) |

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M. Tech Assignment- 2

Advanced logic Design (MEVD-103)

Session July 2014- Dec 2014

**Date of Assignment: 28.10.2014** **Date of Submission: 22/ 11/2014**

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|---|---|
| Q.1 | Differentiate between Melay type and Moore type finite state machines (2013, 2011) |
| Q.2 | Describe various programmable logic devices ?(2012) |
| Q.3 | Give a brief note on designing of skew finite state machine? (2014) |
| Q.4 | Discuss design process of synchronous sequential circuits? (2014) |
| Q.5 | Explain the following terms<br>(i) Metastability (ii) noise margin (iii) fan in (iv) fan out (2012) |

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M. Tech Assignment- 2

Digital Signal Processing (MEVD-104)

Session July 2014- Dec 2014

**Date of Assignment: 28.10.2014** **Date of Submission: 22/ 11/2014**

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| Q.1 | Explain the effect of finite register length in FIR filter design. (2011) |
| Q.2 | Discuss design of FIR digital filters using window method. Explain different types of windows used in the window design method. (2011) |
| Q.3 | Discuss the design of FIR filter using Keiser window? (2013) |
| Q.4 | Discuss the Elliptic Approximations for designing bandstop IIR filters? (2013) |
| Q.5 | Explain the following<br>(i) Park-McClellan's method (ii) Butterworth approximation |

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M. Tech Assignment- 2

Embedded Microcontroller Programming (MEVD-105)

Session July 2014- Dec 2014

**Date of Assignment: 28.10.2014** **Date of Submission: 22/ 11/2014**

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|---|---|
| Q.1 | Draw the circuit and explain the interfacing of LED in microcontrollers. (2011) |
| Q.2 | Describe the internal architecture of 8051 microcontroller with a block schematic diagram (2013) |
| Q.3 | Describe the various operating modes of the timer/counters and associated control registers of 8051. |
| Q.4 | Explain how serial peripheral interface (SPI) can be used for data transfer. (2013) |
| Q.5 | Explain the following<br>(i) CAN bus architecture (ii) USART (2011) |