Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY
Manipal University

FIFTH SEMESTER B.TECH (E & C) DEGREE END SEMESTER EXAMINATION - NOV/DEC 2016
SUBJECT: ELECTRONIC SYSTEM DESIGN (ECE- 327)

TIME: 3 HOURS **MARKS: 50**

Instructions to candidates
- Answer **ANY FIVE** full questions.
- Missing data may be suitably assumed.

1A. Discuss the design stages for developing a product using the concept of reverse engineering and redesign methodology.
1B. Explain CZ method of crystal growth. Give its merits and demerits.
1C. Power is to be supplied from a source whose resistance is 20kΩ to a load of 100Ω. Would you consider it as a constant current source or voltage source? Draw the circuit and give your inference.

(5+3+2)

2A. Discuss the mother board of a television receiver with necessary block diagram. Give its smart features.
2B. Explain the input and output multiplexing in a data acquisition system.
2C. Draw the crystal orientation of <100 > and <111 > planes.

(5+3+2)

3A. With necessary diagram, discuss various packaging techniques in Electronic system design.
3B. Explain the working of the switch mode power supply. Give its merits and demerits.
3C. At a particular point in a circuit a signal of 2.5Vrms is corrupted by 10mV rms of noise. Calculate the S\N ratio at this point.

(5+3+2)

4A. With flow chart, explain the fabrication techniques of multi-layer printed circuit boards.
4B. Discuss various types of cooling technics in power supply thermal design.
4C. Describe various parameters to quantify the characteristics and performance of micro-sensors.

(5+3+2)

5A. Design a microcomputer based system to sense eight analogue input signals and produce eight analog outputs. The input signal bandwidth is 1kHz. the output signals must drive actuators with a maximum operating bandwidth of 100Hz with accuracy of at least 1 percent.
5B. Discuss various soldering techniques with melting point diagram.
5C. Explain the method of hot and cold checks for circuit troubleshooting.

(5+3+2)

6A. Explain the working of successive approximation ADC with necessary block diagram and waveform. Give the settling time for 8 bit conversion.
6B. Discuss PLCCs, QFPs and TABs in surface mounting technology
6C. Define product quality and reliability in an electronic system design

(5+3+2)