Answer All Questions

QUESTION ONE:

1. Mention the main advantages of ICs over discrete circuits?
2. List four of the Integrated Circuits Generations?
3. List five of the Operating System Services?

QUESTION TWO:

1. Briefly describe the three-dimensional integrated circuit (3D-IC)?
2. Determine the major problems for the nanometer-scale ICs devices?
3. Due to the responding signal mention the IC classification?

QUESTION THREE:

1. Due to the Integrated circuit technology and design determine the meaning of the following terms?
   - SOC.
   - WSI
   - CAD.
   - VLSI
2. Briefly explain Moore's Law?
3. Determine the design key parameters.

QUESTION FOUR:

1. Sketch out all Chip specification aspects?
2. Differentiates between analog and digital system in terms of?
   - Response to the noise.
   - Design cost.
   - Error Detection and Correction.
   - Precision.
3. Explain the environmental parameters that cause chip malfunctions?
**QUESTION FIVE:**

1. Due to the traditional Integrated Circuits design procedure mention only one tool that use for each of the following design process?
   - Draw a circuit.
   - Simulate a circuit.
   - Layout a chip.
   - Mask a circuit.
   - Generate the low-level designs.

2. Mention the basics functions for the IC package?

3. Determine the functions for each of the following integrated circuits fabrication process?
   - Mask production.
   - Circuits test
   - Production test.
   - System partitioning into sub-systems.
   - System Specification.

[End of Question Paper]
(Good Luck)

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