Question Bank (G Scheme)

Name Of Subject: VLS I   **Unit Test:**

Subject Code: 17659   **Course: EJ6G**

Semester: VI

Chapter 1: Introduction TO Advanced Digital Designs

14 M

3 Marks

1) Define:

   a) Metastability   b) Noise Margin

   c) Power Fan-Out   d) Skew

   2) Comparison between Melay & Moore machines.

4 Marks

3) Differentiate between asynchronous sequential and synchronous sequential circuits.

4) Draw & explain Melay machines.

5) Draw & explain Moore machines.

6) Draw state diagram & block diagram of Melay state machine with clocked output.

7) Draw state diagram & block diagram of Moore state machine with clocked output.

8) Explain 3-bit asynchronous down counter.

Chapter 2: Introduction TO CMOS technology 20M

3 Marks

9) State the important application of VLSI.

10) List the basics IC fabrication process.

11) Write short note on n-well fabrication process of CMOS.

12) Write short note on twin-tube fabrication process of CMOS.

13) Explain operation of CMOS inverter.

4 Marks

14) Comparison between BJT & CMOS.

15) Describe how silicon wafer is prepared.

16) Explain the process of epitaxial growth of process.

17) Describe the process of Ion implantation for fabrication of IC.

18) Explain the Oxidation process for fabrication of IC

19) Explain how integrated resistor is fabricated.

20) Explain how integrated capacitor is fabricated.

21) Explain operation of CMOS NOR gate

22) Explain operation of CMOS NAND gate.

23) Design a logic circuit for $Z=\overline{AB + CD}$ using CMOS NAND gate.

Chapter 3: Introduction to VHDL
6M

3 Marks

24) What is VHDL & give the history of VHDL.

4 Marks

25) What are the Pros & Cons of VHDL.