

R09

Code: 9A12301

II B. Tech I Semester (R09) Supplementary Examinations, May 2012
DIGITAL LOGIC DESIGN & COMPUTER ORGANIZATION
(Common to CSS & IT)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What are self complementing codes? Give examples.
(b) Write the procedure for constructing hamming codes. Construct hamming codes for the decimal numbers 1, 4, 8.
- 2 (a) Differentiate in detail the synchronous and asynchronous sequential circuits.
(b) Design the SR flip flop using NAND gates and explain its operation with the help of characteristic table and characteristic equation.
- 3 (a) Design a 4-bit bidirectional shift register.
(b) Design a Serial in and parallel out 4 bit shift register.
- 4 Show that $673-356$ can be computed by adding 673 to the 10's complement of 356 and discarding the end carry. Draw the block diagram of a three-stage decimal arithmetic unit and show how this operation is implemented. List all input bits and output bits of the unit.
- 5 Explain about data manipulation instructions with an example.
- 6 (a) Discuss on the single bus organization of the processor unit.
(b) Define micro instruction.
- 7 (a) Draw and explain the set associative cache organization.
(b) Give the comparison between mapping techniques.
- 8 (a) Explain with the help of neat sketch the single bus structure and multiple bus structure to connect I/O devices to a computer.
(b) Explain the different types of signal transfers that take place during CPU communication.
