2054
M. Tech. (Micro-Electronics)
Second Semester
MIC-202: Architecture of VLSI Design

Time allowed: 3 Hours

Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I.   (a) Give steps of behavioral flow.

(b)Discuss the design of ALU.

(c) Describe the operation of DMA controller.

(d) What is the role of Virtual memory?

(e) How pipeline system improves the performance?   [5x2]

UNIT - I

II.   (a) Explain the concept of subroutine and subroutine call.   [5]

(b) How assembly programming is different from High Level programming?   [5]

III.   (a) What is structural modeling? Explain with a suitable example.   [5]

(b) Discuss micro-operation and their RTL specifications with example.   [5]

IV.   (a) Draw semiconductor memory organization and explain its features.   [5]

(b) Give steps for microprogrammed control CPU design.   [5]

UNIT - II

V.   (a)What are the key features of Cache memory? How this is different from main memory?   [5]

(b)Design a 6T SRAM cell architecture and explain its read operation.   [5]

VI.   (a) How on-chip and off-chip memory organization works?   [5]

(b) Explain VLSI architecture optimization for minimum interconnections.   [5]

VII.   Write a note on:

(a) Scheduling in multiprocessor system.   [5]

(b) Parallelism Algorithm.   [5]

x-x-x