

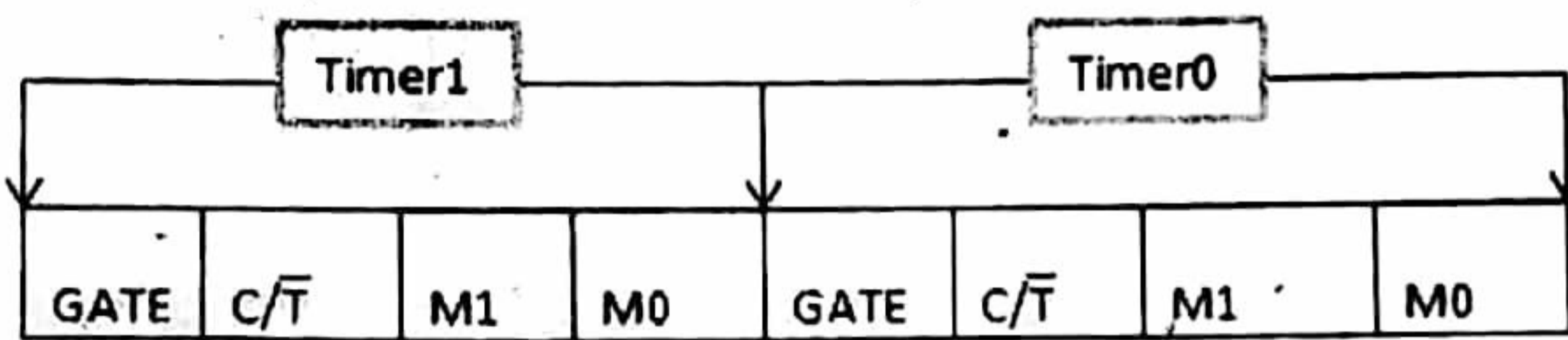
Time: 3 Hours

Marks: 80

- Question no. 1 is compulsory
- Attempt any Three questions from remaining
- Assume suitable data wherever necessary

- 1 a) Explain Program Status word Register of 8051 Microcontroller [5]  
 b) Explain any five Addressing modes of 8051 with one example in each [5]  
 c) Write short notes on CPSR of ARM7 [5]  
 d) Differentiate between ARM and THUMB state. [5]

- 2 a) Explain Internal RAM Organization of 8051 Microcontroller [10]  
 b) Write a program for 8051 microcontroller to generate square waveform of 2kHz & 50% duty cycle at pin P2.1. Assume 8051 is operating at frequency 11.059MHz. Use hardware timer 0 in mode 1 to generate delay. [10]



**TMOD Register**

- 3 a) Explain Interrupts in 8051 along with Interrupt vector table. [10]  
 b) Explain LCD interfacing with 8051 and write assembly language program to display message "HI" on it. Draw the connection diagram of 8051 with LCD. [10]

- 4 a) Explain in detail 8051 Timer operating modes [10]  
 b) Draw & Explain dataflow model of ARM7 [10]

- 5 a) Explain Operating modes of ARM7 Processor [10]  
 b) Explain Addressing modes of ARM7 Processor with examples [10]

- 6 a) Explain following instructions of ARM7 processor with example [10]  
 1. ADD r0, r1, r1, LSL #1  
 2. STR r0, [r1]  
 3. LSR r0, #2  
 4. LDR r0, [r1, #2]  
 5. CMP r0, r1, LSR #3

- b) Write embedded C language program to blink LED at P0.16 with certain delay. Use Software approach to generate delay. [10]