

Time:-3 Hours

Marks:-80

- N.B: 1) Question No 1 is Compulsory
2) Attempt any 3 questions from remaining questionsa

- Q1) a) Justify why the ports of 8051 are initialised to FFH when operating in input Mode. (5)
b) Explain the ARM 7 Pipeline Mechanism and give its advantages ,disadvantages over ARM 9 Pipeline. (5)
c) Explain the significance of Gate Pin in 8051 (5)
d) Explain Idle mode and Power down mode of 8051. (5)

- Q2)a)Write a program to generate a square wave with duty cycle 10ms.
Crystal Frequency =11.0592 MHz (10)
b) Write a Program to Transmit message “welcome ” serially at 9600 Baud Rate .
Show the Baud Rate Calculation. (10)

- Q3 a) Draw the ARM7 Register Model and Explain its operating Modes with suitable examples (10)
b) Explain the following ARM7 instructions (10)

i) LDMIA r0 !,{r1-r3}

PRE Values are

r0=0x00080010

mem32[0x00080018]=0x00000003

r1=0x00000000

mem32[0x00080014]=0x00000009

r2=0x00000000

mem32[0x00080010]=0x0000000A

r3=0x00000000

Write the POST values

ii) STMFD !,{r1,r4}

mem32[0x00080018]= 0x00000003

r1=0x00000002

mem32[0x00080014]= 0x00000009

r4=0x00000003

mem32[0x00080010]= empty

mem32[0x0008000C]= empty

iii) MRS r1, cpsr

iv) ADD r0,r3,r4 LSL #4

- Q4a) Explain the Interrupt structure of ARM7. (10)

- b) Explain the interrupt structure of 8051 and related registers used (10)

- Q5) a) Write a Program to display the message Temperature on LCD. (10)

- b)Write a Program to Rotate a Stepper Motor continuously using 4 step sequence. (10)

- Q6) Interface 32K RAM (using 16 K) and 32 K ROM (using 16k) to 8051.Show the Memory Map ,Clock circuitry ,Reset circuitry and other interfacing signals. (20)
