

[Time: 3 Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. Question no. 1 is compulsory
 2. Solve any three questions out of remaining questions.
 3. Figures to the right indicate full marks.
 4. Assume suitable data where necessary.

- Q. 1**
- a) Explain TMOD register of 8051 microcontroller. **04**
 - b) Explain SCON register of 8051 microcontroller **04**
 - c) Explain Current Program Status Register of ARM7 **03**
 - d) Explain PUSH & POP instruction in 8051 microcontroller **03**
 - e) Explain Preindexed & Postindexed addressing mode of ARM7 **03**
 - f) List & Explain design metrics of Embedded Systems **03**
- Q. 2**
- a) Interface ADC 0808 with 8051 microcontroller. Write Assembly language Program to convert analog signal which is available on channel No 6 to digital and store in memory location. **10**
 - b) Draw & Explain dataflow model of ARM7. **10**
- Q. 3**
- a) Explain the Memory Interfacing of 8051 with 16K*8 Data RAM & 16K*8 Data ROM **10**
 - b) Write a program for 8051 microcontroller to generate square waveform of 1 Hz & 50% duty cycle at pin P1.5. Assume 8051 is operating at frequency 11.059 MHz. **10**
- Q. 4**
- a) Explain Internal RAM Organization of 8051 microcontroller. **10**
 - b) Explain following instructions of ARM7 **10**
 1. RSB r0, r1, r2
 2. ORR r0, r1, r2
 3. LDR r0, [r1, #2]
 4. AND r1, r1,#3
 5. CMP r0, r1,LSR #3
- Q. 5**
- a) Explain Operating modes of ARM7 Processor **10**
 - b) Discuss Digital camera as an Embedded System **10**
- Q. 6** Write short notes on **(Any Two)** **20**
- 1) Interrupt Structure in 8051
 - 2) Serial communication in 8051
 - 3) Addressing modes in 8051
