

GANPAT UNIVERSITY
B.Tech Sem. VIIIth Biomedical & Instrumentation Engineering
CBCS Regular Examination April - June 2015
2BM804 Embedded System Design

Time: 3 Hours

Total Marks-70

Instructions:-

1. All the questions are compulsory.
2. Answer of each section must be written in separate answer books.
3. Figure to the right indicate marks.
4. Assume data, if needed.
5. Conventional terms / notations are used.

Section – I**Que.1****[12]**

- a). Answer the following.
- 1) PIC is _____ bit Microcontroller.
 - 2) IN PIC18 ROM is _____ wide.
 - 3) PIC18F series has program memory addressing upto _____.
 - 4) Maximum number of banks PIC 18 has _____.
 - 5) The instruction “ADDWFC file reg, W” places the sum in _____.
 - 6) The general-purpose RAM and SFRs together are called _____.
- b). Explain
- | | | |
|----------------------|----------|-----------------|
| 1). MOVLW 55H | 2). COMF | 3). ADDWF 12H,F |
| 4). XORWF fileReg, d | 5). BRA | 6). DECFSZ |

OR**Que.1.****[12]**

- a). Discuss various features of PIC18F series microcontrollers.
- b). Discuss T0CON register of PIC18F.

Que.2.**[11]**

- a). Give the definition of embedded system. Explain embedded system giving neat block diagram.
- b). Draw and discuss PIC18F452 Microcontroller DIP pin configuration

OR**Que.2****[11]**

- a). Describe various PIC directives.
- b). Draw and explain interfacing of LCD with PIC18 and write the codes for the same

Que.3. Answer any three.

[12]

- a). Write a PIC Program to toggle all the bits of Port B ports continuously with a 250ms delay. Assume XTAL=10MHz
- b). Led are connected to bits in Port B and Port C. Write a PIC program that shows the count from 0 to FFH on the LEDs
- c). Discuss INTCON register in PIC18F series.
- d). Describe addressing modes of PIC 18F series.

Section – II

Que.4.

[12]

- a). Explain core extensions of ARM processor.
- b). Explain memory classification based on different parameters.

OR

Que.4.

[12]

- a). Explain different processor modes of ARM with respective registers.
- b). Explain why ARM is not purely RISC.

Que.5.

[11]

- a). Explain interrupts and reset in MSP430.
- b). Explain any one type of data processing instruction in ARM.

OR

Que.5.

[11]

- a). Explain functional block diagram of MSP430 Processor.
- b). Explain following instruction.

- a) ADD r0,r1,r1,LSL #2
- b) RSB r2,r2,r2,LSL #3

Que.6.

[12]

- a). Explain CPU registers in MSP430.
- b). What is difference between RISC and CISC Architecture?
- c). Explain memory and interrupt controller in ARM.

END OF PAPER

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