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**Question Paper Code : 40940**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Sixth/Seventh Semester

Electronics and Communication Engineering

EC 6013 : ADVANCED MICROPROCESSORS AND MICRO CONTROLLERS

(Common to : Medical Electronics)

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. What is branch prediction ?
2. State the flag registers in pentium processor.
3. Differentiate RISC from CISC.
4. What is a primitive ?
5. Outline two applications of FIR filters.
6. Name four ARM processor exceptions.
7. What are the operating modes of Motorola 68HC11 microcontroller.
8. State any four features of MC68HC11 micro controller.
9. What is Harrard architecture ?
10. State the functions of working register in PIC micro controller.

PART – B

(5×13=65 Marks)

11. a) Draw and explain the architecture of a pentium processor.

(OR)

- b) Explain the addressing modes used in pentium processor with an example for each.

12. a) Briefly explain the thumb instruction set of ARM.

(OR)

- b) Illustrate on the registers and vector table used in ARM processor.

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13. a) Illustrate the cache architecture of ARM processor.

(OR)

b) Explain on the interrupts and any four interrupts handling schemes of ARM processor.

14. a) i) Explain about the interrupts available in 68HC11 microcontroller. (8)

ii) Explain the serial communication concept in 68HC11. (7)

(OR)

b) Explain the addressing modes with examples in 68HC11 microcontroller.

15. a) Explain in detail on the timers of PIC micro controller.

(OR)

b) Write a detailed notes on I<sup>2</sup>C bus operation and an application in PIC microcontrollers.

PART – C

(1×15=15 Marks)

16. a) Design a hardware setup for any three applications of PWM outputs of PIC microcontroller.

(OR)

b) i) Write a C program in ARM environment to divide a number by a signed constant. (8)

ii) Write an ALP in ARM environment to sense temperature and display in LCD. (7)