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# Question Paper Code : 50422

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Sixth/Seventh/Eighth Semester

Electronics and Communication Engineering

EC 6013 – ADVANCED MICROPROCESSORS AND MICROCONTROLLERS

(Common to Medical Electronics)

(Regulations 2013)

Time : Three Hours
Maximum : 100 Marks

Answer ALL questions

PART – A
(10×2=20 Marks)

1. List the types of interrupts.

2. How do you apply branch prediction in Pentium processor ?

3. Formulate necessary code using ARM assembly language program for creating a delay.

4. Suggest the rules which apply to ARM data processing instructions.

5. Draw the Relationship that a cache has between the processor core and main memory.

6. List the guidelines to write DSP code for ARM.

7. How to program 68HC 11 to operate at 9600 baud rate ?

8. What is UART ?

9. Sketch the status register format in PIC micro controller.

10. Specify the different interrupt resources present in the PIC microcontroller.

PART – B
(5×16=80 Marks)

11. a) i) With suitable examples, explain the addressing modes available in Pentium processor. (8)

   ii) Explain the different operating modes of Pentium processor. (8)

(OR)

   b) Elaborate on the on chip floating point unit of Pentium processor. (16)

12. a) i) With formats, explain the branch, call and return instructions in ARM
instruction set. **(10)**

   ii) Write a program to find the product of two numbers. **(6)**

   (OR)

   b) i) Analyze the structure arrangement in programming the ARM processor. **(8)**

   ii) Explain the operation of Push and Pop instructions in ARM. **(8)**

13. a) Design a Memory protection unit with respect to ARM application development. **(16)**

   (OR)

   b) i) Describe about the interrupts and its associated usage in ARM processor. **(10)**

   ii) How would you enable and disable FIQ and IRQ exceptions ? **(6)**

14. a) Explain 68HC 11 microcontroller environments to transmit and receive data at
different bits rates in serial fashion. **(16)**

   (OR)

   b) i) Illustrate the Arithmetic instructions of 68HC 11 with suitable examples. **(8)**

   ii) Outline the concepts of Real Time clock in 68HC 11. **(8)**

15. a) Realize the following applications using PIC Microcontroller. **(16)**
   i) To measure the received Pulse Width and control a DC motor based on the
   pulse width.
   ii) Burglar Alarm.

   (OR)

   b) i) Explain the various features of 12 C bus for peripheral chip access. **(8)**

   ii) Discuss on the role of an A/D in a PIC microcontroller. **(8)**

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