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**Question Paper Code : 91430**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Sixth/Seventh/Eighth Semester

Electronics and Communication Engineering

EC 6013 – ADVANCED MICROPROCESSORS AND MICROCONTROLLERS

(Common to Medical Electronics)

(Also common to PTEC 6013 – Advanced Microprocessors and Microcontroller for  
B.E. Part-Time – Sixth Semester – Electronics and Communication Engineering  
– Regulations 2014)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Define multi-tasking.
2. What are the advantages of instruction pipelining ?
3. Summarize how ARM handles the exceptions.
4. Identify the need of thumb instruction set.
5. What is context switching ?
6. Define cache memory.
7. What is the use of real time clock ?
8. Define polling.
9. Specify the different interrupt resources in PIC microcontroller.
10. How many I/O ports are supported in PIC microcontroller ?

PART – B

(5×13=65 Marks)

11. a) i) With suitable examples, explain the addressing modes available in Pentium processor. (8)  
ii) Write short notes on register file. (5)

(OR)

- b) What are pipeline hazards ? Discuss them in detail.



12. a) i) List the different ARM Development Tools and describe about them. (8)  
ii) Illustrate the ARM Programmers Model with necessary diagrams. (5)  
(OR)
- b) i) Define the architectural inheritance of ARM processor and explain. (8)  
ii) Name the principle features of ARM architecture. (5)
13. a) In accordance to ARM processor, explain in detail about  
i) Exceptions and its associated modes. (8)  
ii) Exception Priorities. (5)  
(OR)
- b) i) Explain the basic cache architecture and the operation of cache controller. (8)  
ii) Name the different methods to Lock down cache. (5)
14. a) Discuss in detail about ADC unit features and conversion process in 68HC11 microcontroller.  
(OR)
- b) Elaborate the different addressing modes used in 68HC11 with suitable examples.
15. a) i) Describe the architecture of PIC microcontrollers. (8)  
ii) Discuss the features of register bank in PIC microcontroller. (5)  
(OR)
- b) i) Describe how the timers are used as event counters in PIC microcontroller. (8)  
ii) Explain interrupts handling in PIC microcontroller. (5)

## PART – C

(1×15=15 Marks)

16. a) i) Explain the concept of serial communication with a suitable application in MC68HC11. (8)  
ii) Illustrate the Arithmetic instructions of 68HC11 with suitable examples. (7)  
(OR)
- b) Design an IIR filter using ARM7 TDMI processor for  $1 \times 2$  block.
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