Reg. No. : | | | | | | | | | | | |

Question Paper Code : X 20428

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020
Sixth/Seventh/Eighth Semester
Electronics and Communication Engineering
EC 6013 – ADVANCED MICROPROCESSORS AND MICROCONTROLLERS
(Common to Medical Electronics Engineering)
(Regulations 2013)
(Also Common to PTEC 6013 – Advanced Microprocessors and Microcontrollers 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. What is meant by paging ?
2. Mention the different types of pipeline hazards.
3. Give the visible registers of ARM.
4. Define Primitives.
5. What is context switching ?
6. Identify the role of Memory Management Unit.
7. What is the use of real time clock ?
8. Point out any 2 features of internal ADC of MC68HC11.
9. Draw the format of a data transfer packet of I^2C.
10. Specify the different interrupt resources present in PIC microcontroller.

PART – B **(5×13=65 Marks)**

11. a) i) With suitable examples, explain the addressing modes available in Pentium processor. **(9)**

    ii) Write short notes on register files. **(4)**

(OR)

b) Write short notes on :

    i) Pipelining **(7)**

    ii) Multitasking **(6)**

12. a) i) Define the architectural inheritance of ARM processor and explain. **(9)**

ii) Name the principal features of ARM architecture. **(4)**

(OR)

b) i) List the different ARM Development Tools and describe about them. **(8)**

ii) Illustrate the ARM programmers Model with necessary diagrams. **(5)**

13. a) i) Discuss the interrupt handling schemes of ARM processor. **(9)**

ii) Summarize its advantages and disadvantages. **(4)**

(OR)

b) Illustrate the firmware for an ARM processor with an example. **(13)**

14. a) Discuss in detail about :

i) ADC unit features in 68HC11. **(7)**

ii) A/D conversion process in 68HC11 microcontroller. **(6)**

(OR)

b) Outline the concepts of :

i) Real Time clock in 68HC11. **(7)**

ii) Interrupt vectors and its priorities. **(6)**

15. a) i) Describe the architecture of PIC microcontrollers. **(9)**

ii) Discuss the features of register bank in PIC microcontroller. **(4)**

(OR)

b) i) Describe how 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) Examine the implementation of branch, call and return instruction in ARM instruction set. **(10)**

ii) Write a program to find the product of two numbers. **(5)**

(OR)

b) Using PWM control of 68HC11, write a program to control the speed of the Motor. **(15)**

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