Reg. No. :

Question Paper Code: 49402

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

Elective

Electronics and Communication Engineering

14UEC901 - ADVANCED MICROCONTROLLERS AND MICROPROCESSORS

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. Which of the following are special function registers?   CO1- R

    (a) RIP   (b) RSP   (c) RFLAGS   (d) All the above

2. The _____ stores data used by a program and also the   CO1- R
    instructions of the program.

    (a) Cache Memory   (b) RAM   (c) ROM   (d) EPROM

3. The level 2 cache in the Pentium Pro is _____ of size.   CO2- R

    (a) 256Kbytes   (b) 128Kbytes   (c) 1Mbyte   (d) 1024 bytes

4. The Address Error pin of Pentium II processor is used to check for an   CO2- R

    (a) Address error   (b) Address parity error   (c) Data error   (d) Instruction error

5. What is meant by FSR in a PIC microcontroller?   CO3- R

    (a) File Screening Register   (b) File Select Register

    (c) File Source Register   (d) File Scan Register

6. How many interrupt sources are present in a PIC microcontroller? CO3- R

   (a) 10 (b) 14 (c) 16 (d) 15

7. The STM instruction in ARM is used for _____ CO4- R

   (a) Push (b) Pop (c) Move (d) Save

8. Which of the following statements is true? CO4- R

   (a) Memory faults are available in ARM

   (b) Unused instruction space is present in ARM

   (c) Thumb instruction set is available in ARM

   (d) All the above

9. The PSoC 4 features a ____ bit Cortex – M0 CPU CO5- R

   (a) 8 (b) 16 (c) 32 (d) 64

10. PSoC stands for _____ CO5- R

    (a) Programmable system on chip (b) Peripheral system on chip

    (c) Primary System on Chip (d) None of these

PART – B (5 x 2= 10Marks)

11. What is meant by virtual addressing mode? CO1- R

12. Write short notes on the memory system of the Pentium Pro microprocessor. CO2- R

13. What is the function of CCP module in PIC microcontroller? CO3- R

14. Give two examples of thumb instruction set. CO4- R

15. Write a short note on GPIO pins. CO5- R

PART – C (5 x 16= 80Marks)

16. (a) With a neat block diagram explain in detail about the internal architecture of a 80286 microprocessor.   CO1- U   (16)

Or

(b) (i) Compare 80186, 80286, 80386 and 80486 processors.   CO1- U   (10)

(ii) Explain virtual addressing modes of 80286.   CO1- U   (6)

17. (a) Write in detail about the internal structure of the Pentium Pro microprocessor with a neat diagram and also brief the different pins available in the processor.   CO2- Ana   (16)

Or

(b) (i) Compare the Pentium II, Pentium III and Pentium IV microprocessors in detail.   CO-2 Ana   (10)

(ii) Write short notes on special purpose registers of Pentium processor.   CO-2 Ana   (6)

18. (a) (i) Explain the various addressing modes of PIC microcontroller.   CO3- U   (10)

(ii) Discuss in detail the organization of program and data memory of PIC microcontroller.   CO3- U   (6)

Or

(b) (i) Discuss the core architectural features of PIC microcontroller.   CO3- U   (8)

(ii) Describe the interrupt structure of PIC microcontroller.   CO3- U   (8)

19. (a) Describe the operations carried out by the different data processing instructions in ARM processor.   CO4- U   (16)

Or

(b) Briefly explain about the ARM organization and Implementation.   CO4- U   (16)

20. (a) With a neat block diagram explain the internal architecture of PSoC.   CO5- U   (16)

Or

(b) Briefly explain the basic concepts of PSoC 3 and PSoC 5 and compare their features.   CO5- U   (16)

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